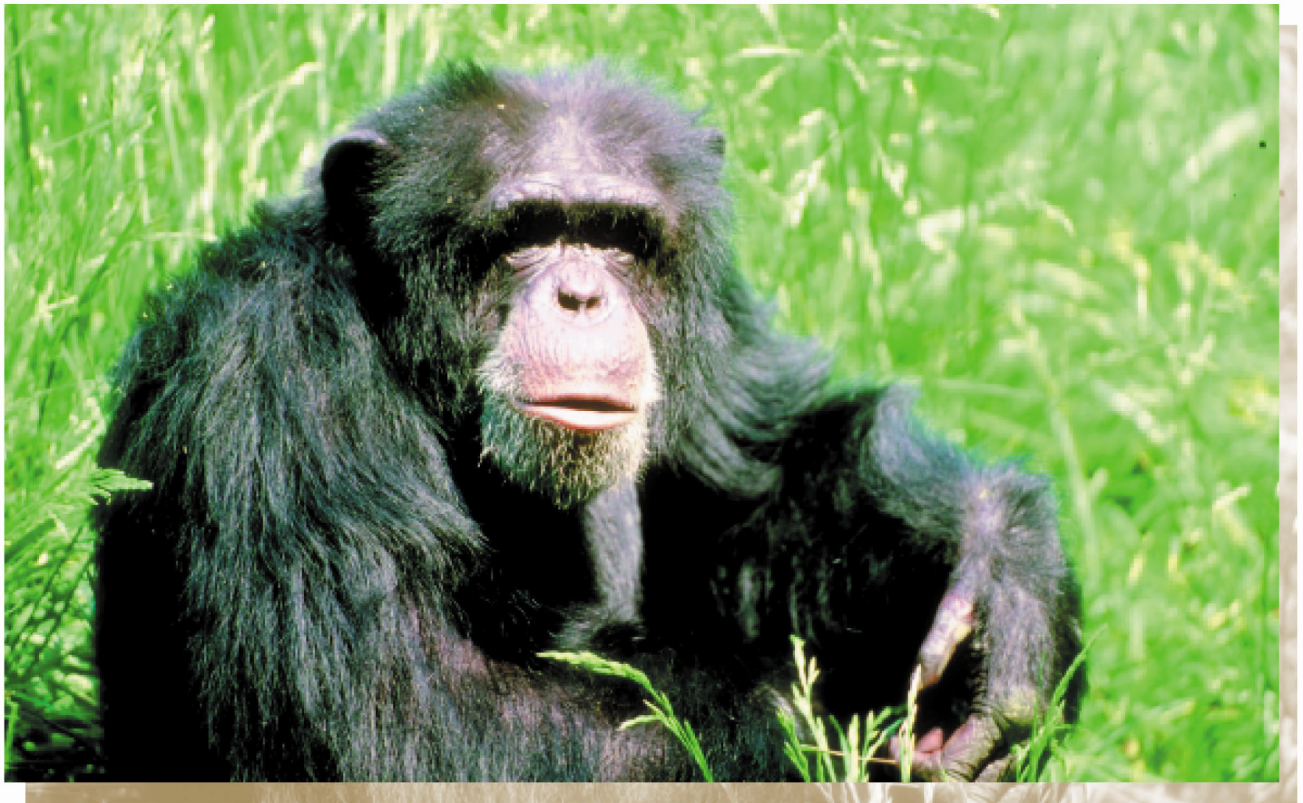


Chimpanzee Sanctuaries: Guidelines and Management Workshop Report



*1-5 May 2000
Entebbe, Uganda*

Hosted By
Uganda Wildlife Authority

In Collaboration With:
Primate Specialist Group (SSC/IUCN)
Conservation Breeding Specialist Group (SSC/IUCN)



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1 – 5 May 2000

Entebbe, Uganda

Sponsored by:

**AAZK-Cleveland
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JGI Uganda
Honolulu Zoo
Knoxville Zoo
Oakland Zoo
San Diego Zoo
Sedgwick County Zoo
Simpson Paper Company
Swinerton, Inc.
Tulsa Zoo**

Participating Sanctuaries:

**Chimpanzee Conservation Centre, Guinea
David Graybeard, South Africa
HELP International, Congo
Kitwe Point, Tanzania
Limbe Wildlife Centre, Cameroon
Ngamba Island Chimpanzee Sanctuary, Uganda
Pandrillus, Nigeria
Sanaga-Yong Chimpanzee Rescue Centre,
Cameroon
Sweetwaters, Kenya
Tacugama, Sierra Leone
Yaounde Zoo, Cameroon**

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Conservation Breeding Specialist Group (SSC/IUCN)**

A contribution of the World Conservation Union, Species Survival Commission, Conservation Breeding Specialist Group (CBSG) and Primate Specialist Group (PSG).

Prepared by participants in the CBSG Chimpanzee Sanctuary Management Workshop, Entebbe, Uganda, May 1-5, 2000.

D. Cox, N. Rosen, C. Montgomery and U.S. Seal (Editors). Conservation Breeding Specialist Group (SSC/IUCN). 2000. *Chimpanzee Sanctuary Guidelines and Management Workshop: Report*. CBSG, Apple Valley, MN.

Additional copies of *Chimpanzee Sanctuary Guidelines and Management Workshop: Report* can be ordered through the IUCN/SSC Conservation Breeding Specialist Group, 12101 Johnny Cake Ridge Road, Apple Valley, MN 55124.

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TABLE OF CONTENTS

Executive Summary and Recommendations	5
Letter of Invitation, Agenda, Opening Comments, Participants	11
Policy Guidelines	25
Sanctuary Management	43
Releases and Site Selection Guidelines	59
Communication and Database	79
Pan-African Sanctuary Alliance (PASA)	93
Local and International Education Guidelines	103
CBSG Workshop Processes and IUCN Guidelines	109
Appendices:	147
Mini-Sanctuary Data Matrix	149
Health Management	167
Behavioral Management	193
Care	213

Contributors list

Chimpanzee Sanctuaries: Guidelines and Management Workshop Report



Section 1

Executive Summary, Problem Statements and Recommendations

EXECUTIVE SUMMARY

Field reports from across Africa indicates that chimpanzees are under heavy siege due to rapid expansion of local human populations and the resultant increases in ongoing hunting and the expansion of the commercial animal trade. One of the major outgrowths of this crisis has been the steady growth of chimpanzee sanctuaries throughout Central and West Africa. From a more humanistic perspective the growth in the number and size of these sanctuaries has had many positive impacts on unnecessary chimp mortality. However, this same rapid proliferation of sanctuaries and their equally rapid population growth has led to some considerable confusion about the management goals of chimp sanctuaries at both the local and regional levels, the development of consistent management standards from one facility to the next, the absence of strict veterinary protocols and training across institutions, and about the nature and structure of fundraising efforts necessary for continued survival of each sanctuary. In addition, the sanctuaries have had difficulties in communicating with and coordinating their management activities with other great ape conservation projects ongoing within Africa.

In response to the need to address these important issues, and after initial contact was made by representatives from the Jane Goodall Institute, CBSG, in collaboration with the Primate Specialist Group, was invited by the Director of the UWA to conduct a regional planning workshop for chimpanzee sanctuaries across central Africa. The meeting was held 1st-5th May 2000 in Entebbe, Uganda – site of the first chimpanzee PHVA (Population Habitat Viability Analysis) held in 1997. This workshop was sponsored by:

AAZK-Cleveland, Andrews/Keys Associates, Basic American Foods, Born Free Foundation, Bristol Zoo, Columbus Zoo, Cleveland Metroparks Zoo, Copenhagen Zoo, Disney Wildlife Conservation Fund, Fort Worth Zoo, IFAW, JGI-Uganda, Honolulu Zoo, Knoxville Zoo, Oakland Zoo, San Diego Zoo, Sedgwick County Zoo, Simpson Paper Company, Swinerton Inc. and Tulsa Zoo.

Sanctuaries from 10 African countries (Cameroon, Gambia, Guinea, Kenya, Nigeria, Democratic Republic of Congo, Sierra Leone, South Africa, Tanzania and Uganda) were represented at the meeting in Entebbe. Important issues to be taken up by participants in the Chimpanzee Sanctuary Management Workshop include: 1) the orphanage crisis which is creating problems regarding the size and dynamics of the existing social groups; 2) appropriate size of sanctuaries; 3) animal relocation issues and 4) effective fundraising initiatives.

PROBLEM STATEMENT AND RECOMMENDATIONS

Problem Statement

Due to the rapid influx of orphan chimpanzees from increased logging, habitat destruction and commercial development of the bush-meat trade, and lack of awareness in chimpanzee range countries, sanctuaries have emerged on an ad-hoc basis resulting in crisis management. This has made it difficult for long-term planning and adequate collaboration between sanctuaries and chimpanzee experts. There is a very evident need for general guidelines for the establishment of chimpanzee sanctuaries, incorporating liaison with host governments, local communities and authorities, site location, long-term sustainability, management practices, chimpanzee management, and health issues.

The long-term lack of international and national will, combined with an increased pressure on natural resources, has resulted in insufficient protection of chimpanzees and their habitats across equatorial Africa. The bushmeat trade alone accounts for thousands of chimpanzee deaths each year. This has led to a dramatic increase in the number of orphaned and confiscated chimpanzees needing care, which in turn has resulted in a proliferation of sanctuaries. Fifteen sanctuaries now accommodate hundreds of chimpanzees and this problem is growing.

Sanctuaries face a lack of fundraising resources, be they a simple lack of relevant donors or the time and ability needed to develop a fundraising proposal. There are a variety of organic/local fundraising schemes that will particularly emphasize commercial activities (for example tourism, merchandising). An alternative source of funds emphasizes altruistic giving. This money can come from a variety of sources, for example grant giving bodies, trusts and foundations, corporate business, multi-national institutions, bi-lateral institutions, and governments. Additionally, gifts in kind can be sourced from a number of organizations. Access to altruistic sources, however, almost invariably requires overseas representation.

Recommendations

Policy

- ❖ Sanctuaries are encouraged to have an explicit conservation policy;
- ❖ The development of a comprehensive management plan is essential;
- ❖ Each sanctuary should have a written policy on the daily care and management of the chimpanzees to ensure their long-term welfare;
- ❖ A written policy and guidelines on communication and public relations is necessary;
- ❖ Sanctuaries should consider forming an African Chimpanzee Sanctuary Alliance.

Behaviour and Reproduction

Group size should attempt as much as possible to mimic the situation in the wild, therefore, unnatural group compositions, such as multi-male groups, should be avoided whenever possible.

Any observation of abnormal behaviour should be reported in written form to the sanctuary manager as soon as possible.

Communications and Database

Sanctuaries should keep information on organizational details, animal records, range country data, and activities undertaken by the sanctuary in a standardized format and be accessible to all stakeholders.

Sanctuary Management

1. Common Objectives and Long-Term Development

Individual sanctuaries and a possible future umbrella organisation to cooperate with host Governments for a Memorandum of Understanding (MOU), and commitment to enforce local and international wildlife laws.

2. Contingency Planning

Establishment of an Emergency Task Force (ETF) to address funding, donations of supplies, expert database and detailed guidelines for all possible emergencies.

3. Carrying Capacity

Create and complete a database on sanctuaries based on past and present rate of confiscations and carrying capacities to be up-dated monthly.

4. Site & Release Criteria

Prepare guidelines for site criteria pertaining to future release and/or no release options. Prepare guidelines for the release of wild-born captive chimps into the wild.

5. Chimpanzee Management

Compilation of a chimp care management manual for African based sanctuaries which takes into consideration the psychological and physical well-being of orphaned chimpanzees.

6. Health Issues

Compilation of health care protocols that encompass: mandatory quarantine procedures; preventative medicine; zoonoses. The development of a vet/MD specialist directory incorporating the diagnostic capabilities and facilities available in each region.

Chimpanzee Sanctuaries: Guidelines and Management Workshop Report



Section 2

Letter of Invitation, Agenda, and Workshop Organization

Letter

Letter

Chimpanzee Sanctuary Management Workshop

1-5 May 2000
Entebbe, Uganda

Preliminary Agenda

1 May	9:00 - 9:30 AM	Opening of Workshop UWA-Deputy General Norm Rosen
	9:30 - 10:00	Workshop Survey #1
	10:00-10:30	Introduction to the CBSG Workshop Process Dr. Ulie Seal, CBSG
	10:30-11:00	Break
	11:00-12:00	Short Summary Presentations Dr. Richard Wrangham Chris Mitchell
	1:00 - 3:00 PM	Determination of Working Group Topics Working Group Formation
	3:00 - 3:30	Break
2 May	3:30 - 5:30 PM	Working Groups
	8:30 -10:30 AM	Plenary Session
	10:30 - 5:30 PM	Working Groups: Problem Analysis & Goal Development Optional Evening Sessions
3 May	8:30 -10:30 AM	Plenary Session
	10:30 -5:30 PM	Working Groups: Formulation of Recommendations Optional Evening Sessions
4 May	8:30 -12:00	Working Groups: Formulation of Actions & Development of Draft Report
	1:00 - 3:00	Plenary Session
	3:00 - 5:30 PM	Working Groups: Revision of Recommendations & Actions
5 May	8:30 -11:00 AM	Final Plenary Sessions
	11:00-11:30	Workshop Survey #2
	11:30-12:00	Closing of Workshop Dr. Robbie Robinson, UWA Executive Director

PLENARY 1: Expectations and particular topics of interest

Name	Organisation/Country	Expectations from the Workshop	Particular topics of interest
Sarah Marshall	St Andrews University, Scotland	<ul style="list-style-type: none"> Discover more about chimp conservation and the role played by sanctuaries. 	<ul style="list-style-type: none"> How research can serve chimp conservation in general and chimp sanctuaries, in particular.
Becky Harris-Jones	Born Free Foundation, UK	<ul style="list-style-type: none"> To investigate the range of sanctuary experiences and through this formulate standardized management guidelines (including a non-breeding policy). To provide ideas as long term sustainability, high standard facilities and ensure that the welfare of the chimp remains the top priority. 	<ul style="list-style-type: none"> To also look to developing levels to raise awareness at a local and global level.
Rosalind Alp	Step-by-Step Foundation, UK	<ul style="list-style-type: none"> A genuine collaboration in standards of care and management of chimpanzee sanctuaries – focusing on communication between sanctuaries and support. 	<ul style="list-style-type: none"> General management – healthcare, research, confiscation and financial help.
Chris Tuite	IFAW, USA	<ul style="list-style-type: none"> The development of self-sustainable models for supporting sanctuaries in long-term. 	<ul style="list-style-type: none"> Identification of priorities for reducing the causal factors of chimp population decline. How to collaborate.
Neil Maddison	Bristol Zoo, UK (Principal sponsor of Cameroon Wildlife Aid Fund, based at Yaounde Zoo, Cameroon)	<ul style="list-style-type: none"> Co-ordinate a strategy to address the root causes of sanctuaries. 	<ul style="list-style-type: none"> How do we, as a group, use our influence to access funds from multi-national organisations – specifically medium sized (1-10m) projects, under a fast track method.
Michael Wamithi	IFAW, Kenya	<ul style="list-style-type: none"> Cause of collaborative action to tackle exotic pet trade/bushmeat trade. 	<ul style="list-style-type: none"> Reintroduction of sanctuary species back to the wild.
Lucy van Beek	Tigress Productions, UK (Makers of wildlife films)	<ul style="list-style-type: none"> Expectations to learn about problems facing sanctuaries here, the bushmeat trade, chimp conservation. 	<ul style="list-style-type: none"> My interest is to find a way that we can make TV programme that cover these issues involved, and taking it to a very large audience.
Diccon Westworth	University of California, Veterinary resident in primate medicine and surgery	<ul style="list-style-type: none"> For my expectation and main issue I will integrate under one umbrella – collaboration, the working together and stringing together of resources, pooled, then distributed rather than competing against for a set of resources. 	
Tammie Bettinger	Cleveland Zoo, USA	<ul style="list-style-type: none"> My expectation is to learn about the cause of orphaned/confiscated chimpanzees and to determine how North American Zoos can help. 	<ul style="list-style-type: none"> Topic most important is cause of these animals ending up in sanctuaries and how to communicate this to North American audience. Database on sanctuaries throughout Africa Information on magnitude of chimpanzee confiscation problems.
Peter Chr. Hammelsbeck	Chairman, JGI Germany	<ul style="list-style-type: none"> A settled and strong coalition of all NGO's involved in Great Apes with sharing and divide resources in future to avoid inventing wheels more than twice. 	<ul style="list-style-type: none"> To make a concerted approach to EU Brussels, especially the bushmeat trade to avoid more sanctuaries in future. How to benefit and involve local communities. Education at schools in the industrial countries.

PLENARY 1: Expectations and particular topics of interest (continued)

Name	Organisation/Country	Expectations from the Workshop	Particular topics of interest
Peter Gray	David Greybeard Sanctuary, South Africa (also representing Tchimpounga)	<ul style="list-style-type: none"> Inclusion of the USA chimps in the bushmeat issue. Turning biomedical-genetic issues to the advantage of animals, primates and especially chimpanzees and government liaisons. Conflict of organizations. 	<ul style="list-style-type: none"> A working document covering these issues.
Andy Whiten	St Andrews University, Scotland	<ul style="list-style-type: none"> First bird's eye view of sanctuaries achievements and potentials. 	<ul style="list-style-type: none"> Particularly unique opportunity to understand and demonstrate cultural capacities of chimpanzees, with differences.
Kay Farmer	University of Stirling, UK	<ul style="list-style-type: none"> Encourage communication and exchange of ideas/methods in the long term. 	<ul style="list-style-type: none"> Long-term goals of projects and their varied approaches to individual problems.
Aliette Jamart	HELP, Congo	<ul style="list-style-type: none"> More exchange of ideas and methods. Real objective discussion between participants to become patterns. Find a long-term future for captive chimpanzees (ex wild) to put them back to natural conditions. 	<ul style="list-style-type: none"> Increasing sanitary advices and the presence (permanent) of the vet in sanctuary (esp. because reintroduction). Reproduction or not? The long-term future for sanctuaries and the impact in conservation of the species. Another problem: logging?
Ateh Wilson	Limbe Wildlife Centre, Cameroon	<ul style="list-style-type: none"> Exchange of ideas and smooth communication between sanctuary on how we can release animals 	
Peter Jenkins	Pandrillus, Cameroon	<ul style="list-style-type: none"> More Africans involved in workshop. 	<ul style="list-style-type: none"> A consensus reached – on most issues concerning sanctuaries. Vet protocols agreed to. Long-term sustainability on sanctuaries.
Sam Ubi	Pandrillus, Cameroon	<ul style="list-style-type: none"> Communications within sanctuaries. 	<ul style="list-style-type: none"> Assist governments in enforcing laws that protect chimps.
Annie Olivecrona	Sweetwaters, Kenya	<ul style="list-style-type: none"> Get to know the other people from other sanctuaries, as well as the various NGO's that are kindly taking an interest in the sanctuaries. To develop contacts so we can help and support each other in the future. 	<ul style="list-style-type: none"> How we collectively can work towards stopping the bushmeat trade, so there will be less and hopefully soon no, infant chimps and gorillas coming out of the forest. Stop the logging and see how we can influence large organizations to do something about it fast.
Joseph Maiyo	Sweetwaters, Kenya	<ul style="list-style-type: none"> Chimpanzees in the sanctuaries should be preserved not to create more orphans. 	<ul style="list-style-type: none"> This should be looked into through poaching and destruction of their natural habitat.
Claudia Schoene		<ul style="list-style-type: none"> What it is all about 	<ul style="list-style-type: none"> Long-term future of sanctuaries – what comes after sanctuaries?
Ashley Vosper	Massey University, New Zealand	<ul style="list-style-type: none"> Co-operation and sharing of knowledge. Plans that can be carried out. 	<ul style="list-style-type: none"> The role of sanctuaries in relation to the education of people about the chimp problems.
Chris Mitchell	CWAF, Cameroon	<ul style="list-style-type: none"> Some degree of permanent association i.e. continuing forum. 	<ul style="list-style-type: none"> How can sanctuaries really be more involved in chimpanzee conservation – bushmeat.

PLENARY 1: Expectations and particular topics of interest (continued)

Name	Organisation/Country	Expectations from the Workshop	Particular topics of interest
John MacLachlan	Kitwe Point Sanctuary, Tanzania	<ul style="list-style-type: none"> To discuss the role of sanctuaries and formulate more standardized and realistic philosophies of management with regard to long-term sustainability, animal welfare and effectiveness of environmental education. 	<ul style="list-style-type: none"> How can sanctuaries play an effective role in the fight to preserve the species.
Sylvie Briscoe	St Andrews University, Scotland	<ul style="list-style-type: none"> Not only need to focus and collaborate on management of chimp sanctuaries, but also address issues that cause us to have them. One way of doing that, how we can use the sanctuaries for education, both for local communities/through tourism/and also through knowledge and awareness about chimps through research. 	
Carla Litchfield	Adelaide University, Australia	<ul style="list-style-type: none"> Come up with a standardized and realistic management plan for all the African sanctuaries (increase communication and collaboration) and come up with a plan or commitment to immediately work on reducing decline of wild populations (deal with root causes). Form a committee or association 	<ul style="list-style-type: none"> Increase worldwide awareness of problems (no of infants, decline of wild populations), dissemination of information – effectively use orphans as ambassadors for all the great apes.
Frands Carlsen	Copenhagen Zoo, Denmark	<ul style="list-style-type: none"> A clear view of the realistic future of chimpanzees in Africa. 	<ul style="list-style-type: none"> Considering that chimpanzees are here to stay for at least some time – what can you use them for, what is the carrying capacity and what to do when the carrying capacity is exceeded?
Stephen Brend	International Primate Protection League (IPPL), UK	<ul style="list-style-type: none"> Promote the role of sanctuaries in conservation. 	<ul style="list-style-type: none"> Breeding – disease issues people to chimps, chimps to people.
Estelle Raballand	Primate Project/ In Defence of Animals, Guinea/Cameroon	<ul style="list-style-type: none"> Sharing new ideas and experience with other sanctuaries managers/directors. 	<ul style="list-style-type: none"> NGO management from overseas fund raising and running a sanctuary from the middle of nowhere. French translation of documents, Work with partners in West to help deal with illegal trading of chimps and sanctuaries.
Lori Federman	Graduate student at University of Southern California (PhD Social Anthropology/visual anthropology/ primatology)	<ul style="list-style-type: none"> To gain an understanding of how chimpanzee sanctuaries fit in, or the role in the larger system of conservation (and the bushmeat trade) and the general perspective of people on these issues. Best way to use this to educate locals, public and each other. 	<ul style="list-style-type: none"> All aspects of human relationships with/to primates. Focusing – looking at chimpanzee sanctuaries as the result or effect of the bushmeat trade (or the hunting of apes) which is then the cause documenting research along the way. Interested in using video as a tool for education of creating a visual archive using for fundraising and raising pride in the local community to encourage conservation.

PLENARY 1: Expectations and particular topics of interest (continued)

Name	Organisation/Country	Expectations from the Workshop	Particular topics of interest
Cindy Milburn	IFAW, USA	<ul style="list-style-type: none"> To agree goals and action steps that harness the resources, skills and commitment of this very diverse group to ensure the adequate protection of chimpanzees in the wild through: <ul style="list-style-type: none"> - Political - Legal - Enforcement - Education - Public awareness campaigns Not so much raising money/more about effective use of resources 	<ul style="list-style-type: none"> Global recognition Sanctuary protocols (rehabilitation and release) that can offer flexible but universal guidance on good practice for: <ul style="list-style-type: none"> - sanctuary operators - governments and international authorities - sponsoring organizations Good practice, well understood attracts recognition and support
Chie Hashimoto	Kyoto University, Japan	<ul style="list-style-type: none"> Clarifying what is problem to manage and maintain sanctuary, such as political problem, security, breeding, and tourism. 	<ul style="list-style-type: none"> Final goal of sanctuary in future.
Debby Cox	JGI Uganda/Ngamba Island Chimp Sanctuary, Uganda	<ul style="list-style-type: none"> Co-ordinated effort to manage chimp sanctuaries in Africa. Standardized Management Practice. 	<ul style="list-style-type: none"> Long term security for sanctuary – long-term plan to eliminate need for sanctuary, address the root cause. French translations of books.
Josephine Afema	UWEC, Uganda	<ul style="list-style-type: none"> Come up with a standard way to properly manage chimp sanctuaries – network. 	<ul style="list-style-type: none"> Manage health of chimps and personnel working with their chimps in war situations. Education.
Carol Keys	Donor, USA	<ul style="list-style-type: none"> Expectations are to learn how to help raise public awareness of sanctuary and related conservation issues and then to help raise money toward the solutions this group agrees upon. 	<ul style="list-style-type: none"> Expectation of the sanctuaries is that the orphans can be protected and even thrive so that through the raised awareness and education possibilities provided by the sanctuaries, that the wild populations will not require sanctuaries.
Gladys Kalema	UWA, Uganda	<ul style="list-style-type: none"> How to gradually reduce the chimp meat trade with borders in Africa 	<ul style="list-style-type: none"> How to standardize and improve on chimp health and welfare in sanctuaries all over Africa.
Wayne Boardman	UWEC, Uganda	<ul style="list-style-type: none"> To develop a cohesive focused alliance of people concerned with high quality, long term care of chimpanzees in sanctuaries and with unifying to urgently lobby politicians to conserve them in their natural habitat NOW! 	<ul style="list-style-type: none"> To provide high quality multi-lingual standards, operating procedures for the veterinary management of chimpanzees in sanctuaries and for their reintroduction into safe habitats.
Christine Wolf	The Fund of Animals Bushmeat Crisis Taskforce, USA	<ul style="list-style-type: none"> More depth of knowledge about the challenges sanctuaries are facing in Africa. 	<ul style="list-style-type: none"> Bushmeat trade and its relationship to sanctuaries, also newly formed CITES bushmeat working group.

PARTICIPANTS CONTACT LIST

Josephine Afema

UWEC
PO Box 369, Entebbe, Uganda
Tel: (+256) 41 320 520
Fax: (+256) 41 320 076
uweczoo@imul.com

Karl Ammann

Conservation Photographer
Box 437, Nanyuki, Kenya
Tel: (+254) 176 22448
Fax: (+254) 176 32407
kamman@form-net.com

Dr. Wayne Boardman

CSWCT
C/- UWEC, PO Box 369, Entebbe, Uganda
Tel: (+256) 41 320 520
Fax: (+256) 41 320 076
wboardman@ozemail.com.au

Sylvie Briscoe

St Andrews University
81 Hepburn Gardens, St Andrews, Fife, KY16 9LT,
Scotland
Tel: (+44) 1334 470 637
sylv@west-port.freeseerve.co.uk

Debby Cox

JGI/Ngamba Island
C/-UWEC, PO Box 369, Entebbe, Uganda
Tel: (+256) 77 200 602
Fax: (+256) 41 320 076
chimpldy@imul.com

Lori Federman

University of Southern California, Graduate Student
18c South Venice Boulevard, Venice, CA 90291, USA
Tel: (+1) 310 305 8703
lfeddy@hotmail.com

Peter Chr. Hammelsbeck

JGI/Germany
HERZ0G Str. 60, D-80803, Munich, Germany
Tel: (+49) 89 342 299 (+49) 171 5404 151
Fax: (+49) 89 394 503
jgoodall@compuserve.com

Rosalind Alp

Step by Step
Bergweg 6, 9462 Rk, Gasselte, Holland
(Representing Tacugama, Sierra Leone)
Tel: (+31) 599 564 795
Fax: (+31) 599 564 795
Hanson-Alp@Amazed.nl

Dr. Tammie Bettinger

Cleveland Metroparks Zoo,
3900 Wildlife Way, Cleveland, OH 44109, USA
Tel: (+1) 216 635 3314
Fax: (+1) 216 661 3312
tlb@clevelandmetroparks.com

Stephen Brend

IPPL
116 Judd Street, London, WC1H 9NS, UK
Tel: (+44) 20 7278 3317
Fax: (+44) 20 7837 7227
clovenhoof@easynet.co.uk

Frands Carlsen

Copenhagen Zoo
Sdr. Fasanvej 79, DK-2000 Frederiksberg,
Copenhagen, Denmark
Tel: (+45) 3630 2555
Fax: (+45) 3644 2455
fhc-zoo@inet.uni2.dk

Kay Farmer

Department of Psychology, University of Stirling, Stirling
FK9 4LA Scotland
Tel: (+44) 1786 466 373
Fax: (+44) 1786 467 641
k.h.farmer@stir.ac.uk

Dr. Peter Gray

JGI South Africa, David Greybeard Sanctuary
Department Chemical Pathology, 7 York Road, Parktown
2193, South Africa
Tel: (+27) 11 717 2521
Fax: (+27) 11 717 2521
mwigi@mweb.co.za

Becky Harris-Jones

Born Free Foundation
3 Grove House, Foundry Lane, Horsham,
West Sussex, RH13 5PL, UK
Tel: (+44) 1403 240 170
Fax: (+44) 1403 327 837
becky@bornfree.org.uk

PARTICIPANTS CONTACT LIST (continued)

Dr. Chie Hashimoto

Kyoto University
Kanrin, Inuyama, Aichi, 484-8506, Japan
Fax: (+81) 568 63 0546
Tel: (+81) 568 63 0564
hashimot@pri.kyoto-u.ac.jp

Aliette Jamart

HELP Congo
BP 335, Pointe Noire, Republic of Congo
Tel: (+242) 94 15 20
Fax: (+242) 94 40 31
jean-jacques.fontaine@elf-p.fr

Peter Jenkins

Pandrillus
H.E.P.O. Box 826, Calabar, Nigeria
Tel: (+234) 87 234 310
drill@hperia.com

Dr. Gladys Kalema

UWA
PO Box 3530, Kampala, Uganda
Tel: (+256) 77 432 895 OR (+256) 41 346 287
gkalema@starcom.co.ug

Carol Keys

Donor
381 Tamalpais Road, Fairfax, CA 94930 USA
Tel: (+1) 415 459 2439
Fax: (+1) 415 454 8541
carol@andkeys.com

Carla Litchfield

Adelaide University/Adelaide Zoo
PO Box 692, Willunga 5172 SA, Australia
Tel: (+61) 8 855 67367
Fax: (+61) 8 855 67232
aclitch@camtech.net.au

John MacLachlan

Kitwe Point Sanctuary
PO Box 767, Kigoma, Tanzania
Tel: (+255) 695 3404
Fax: (+255) 695 4448
mac.zwick@twiga.com

Neil Maddison

Bristol Zoo Gardens, Clifton, Bristol BS8 3HA, UK
Tel: (+44) 117 970 617
FAX: (+44) 117 973 6814
nmaddison@bristolzoo.org.uk

Joseph Maiyo

Sweetwaters
PO Box 167, Nanyuki, Kenya
Tel: (+254) 0176 324 08
Fax: (+254) 0176 324 08
ann.olivecrona@swiftkenya.com

Sarah Marshall

Department of Psychology, St Andrews University,
KH16 9JU, St Andrews, Scotland
Tel: (+44) 1334 462 072
Fax: (+44) 1334 463 042
srjm@st-and.ac.uk

Cindy Milburn

IFAW
411 Main Street, Yarmouth Port, MA 02675, USA
Tel: (+1) 508 744 2091
cmilburn@ifaw.org

Chris Mitchell

Cameroon Wildlife Aid Fund (CWAF)
C/- Kameni Rose, BP 2008, Messa, Yaounde, Cameroon
Tel: (+237) 31 90 45
Fax: (+237) 20 75 78
cwaf@camnet.cm

Wilhelm Moeller

UWEC
PO Box 369, Entebbe, Uganda
Tel: (+256) 41 320 520
Fax: (+256) 41 320 076
uweczoo@imul.com

Monty (Cherie Montgomery)

JGI/Ngamba Island
C/- UWEC, PO Box 369, Entebbe, Uganda
Tel: (+256) 77 200 602
Fax: (+256) 41 320 076
monty@infocom.co.ug

PARTICIPANTS CONTACT LIST (continued)

Gerald Muyingo

Ngamba Island
PO Box 369, Entebbe, Uganda
Tel: (+256) 41 320 520
Fax: (+256) 41 320 076
chimplyd@imul.com

Estelle Raballand

Project Primate/In Defence of Animals-Africa
Guinea/Cameroon
PO Box 5216, Chapel Hill, NC 27514-5002, USA
Tel: (+237) 21 78 07 OR (+224) 21 39 07
Fax: (+237) 20 92 24
esthel@yahoo.com

Linda Rothen

CSWCT
PO Box 4187, Kampala, Uganda
Tel: (+256) 77 79 80 81
orothern@imul.com

Dr. Claudia Schoene

UWEC
C/- UWEC, PO Box 369, Entebbe, Uganda
curschoene@yahoo.com

Dr. Sheri Speede

In Defence of Animals
BP 1361, Yaounde, Cameroon
In USA: 700 W 126th Avenue, Beaverton, OR 97005
Tel: (+1) 503 643 9948 (USA)
sspeede@yahoo.com

Sam Ubi

Pandrillus
HEPO 826, Calabar, Cross River State, Nigeria
Tel: (+234) 87 234 310
Fax: (+234) 87 234 310
drill@hyperia.com

Laurence Vial

HELP International
82 rue d'Arcueil, 94250 Gentilly, France
Tel: (+33) 1 4547 7478 (+33) 6 1699 0502
laurevial@aol.com

Annie Olivecrona

Sweetwaters
PO Box 167, Nanyuki, Kenya
Tel: (+254) 0176 324 08
Fax: (+254) 0176 324 08 or (+254) 0176 322 08
ann.olivecrona@swiftkenya.com

Norm Rosen

CBSG
27 16th Street, Hermosa Beach, California 90254, USA
Tel: (+1) 310 318 3778
Fax: (+1) 310 798 0576
normrosen@aol.com

Sarah Scarth

IFAW
PO Box 16497, Vloeberg 8018, South Africa
Tel: (+27) 21 465 7300
Fax: (+27) 21 465 6838
sscarth@ifaw.org

Dr. Ulie Seal

CBSG
12101 Johnny Cake Ridge Road, Apple Valley,
MN 55124, USA
Tel: (+1) 952 997 9800
Fax: (+1) 6122 432 2757
office@cbsg.org ulieseal3@aol.com

Chris Tuite

IFAW
411 Main Street, Yarmouth Port, MA 02675, USA
Tel: (+1) 508 744 2141
ctuite@IFAW.org

Lucy van Beek

Tigress Productions
5 Soho Square, London, W1V 5DE, UK
Tel: (+44) 207 434 4411 (+44) 208 870 4316
lucyvanbeek@hotmail.com
lucy@tigressproductions.co.uk

Ashley Vosper

Massey University
2/12 Colombo Street,
Palmerston North, New Zealand
Tel: (+64) 6 355 5819
Fax: (+64) 06 345 4964
A.P.Vosper@massey.ac.nz

PARTICIPANTS CONTACT LIST (continued)

Micheal Wamithi
CSWCT Trustee
PO Box 72710, Nairobi, Kenya
Tel: (+254) 570 540
Fax: (+254) 574 506
mwamithi@ifaw.org

Dr. Andy Whiten
St Andrews University
81 Hepburn Gardens, St Andrews, Fife, KY16 9LT, Scotland
Tel: (+44) 1334 470 637
Aw2@st-andrews.ac.uk

Christine Wolf
Fund for Animals
8121 Georgia Avenue, Suite 301, Silver Springs,
MD 20910, USA
Tel: (+1) 301 585 2591
Fax: (+1) 301 585 2595
cwolf@fund.org

Dr. Diccon Westworth
CRPRC - University of California, Davis
C/- VMTH, University of California, 1 Shields Avenue,
Davis, CA 95616, USA
Tel: (+1) 530 752 8395
drwestworth@primate.ucdavis.edu

Ateh Wilson
Limbe Wildlife Centre
PO Box 878, Limbe, South West Province, Cameroon
Tel: (+237) 43 18 83
Fax: (+237) 43 17 46
jacworth@compuserve.com
ordclvisions@hotmail.com

Dr. Richard Wrangham
Harvard University
11 Divinity Avenue, Cambridge, MA02138, USA
Tel: (+1) 617 495 5948
Fax: (+1) 617 496 8041
wrangham@fas.harvard.edu

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 3

Policy Guidelines

Policy Working Group Report

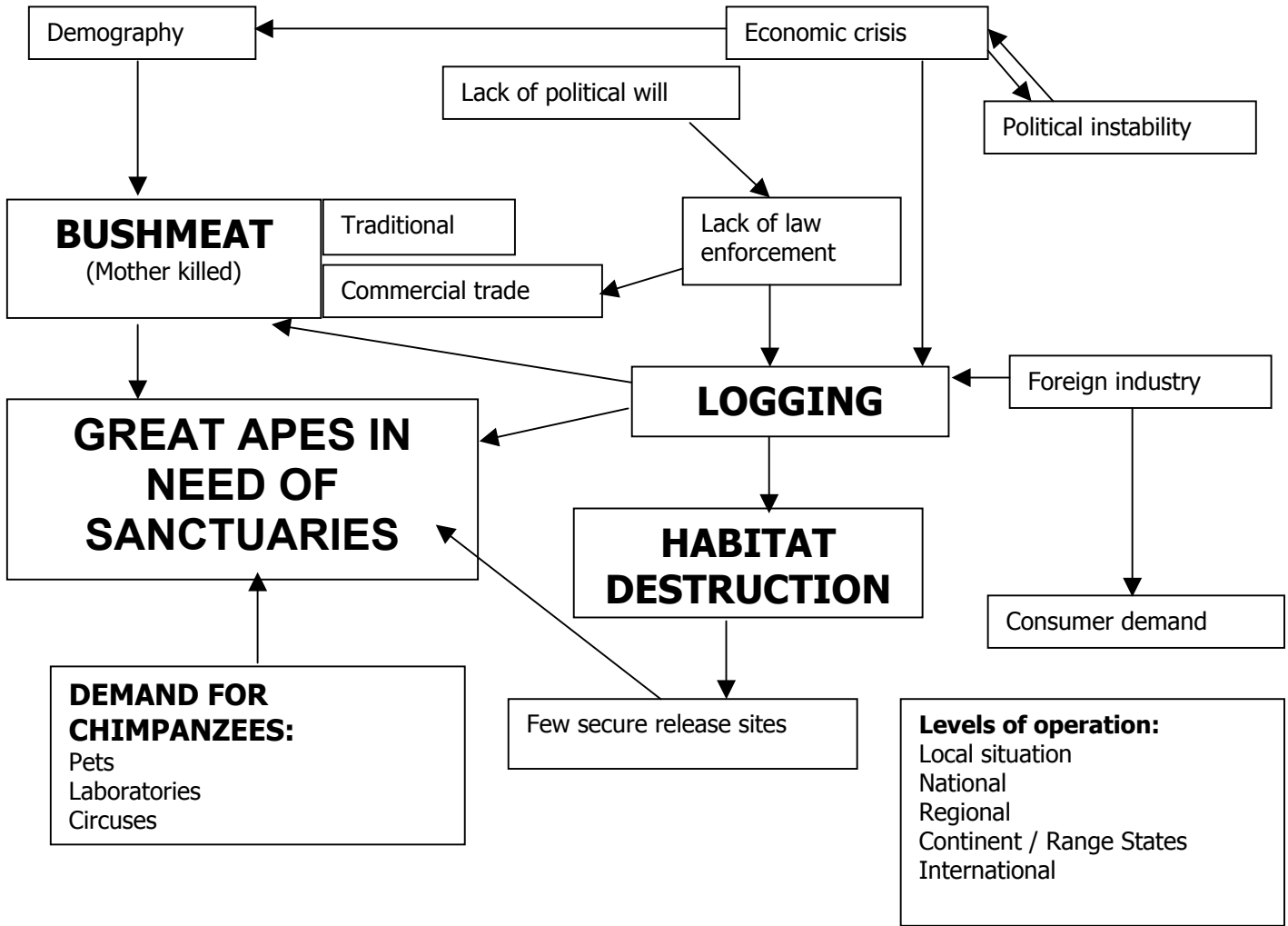
Working Group Participants:

Facilitator: Tammie Bettinger, Cleveland Zoo
Rosalind Alp, Step-by-Step Foundation
Karl Ammann, Wildlife Photographer
Sylvie Briscoe, St Andrews University
Laurie Federman, University of California
Becky Harris-Jones, Born Free Foundation
Peter Jenkins, Pandrillus
Gladys Kalema, Uganda Wildlife Authority
Cindy Milburn, IFAW
Annie Olivecrona, Sweetwaters
Sarah Scarth, IFAW
Chris Tuite, IFAW
Diccon Westworth, University of California
Andy Whiten, St Andrews University

INTRODUCTION

The long-term lack of international and national will, combined with an increased pressure on natural resources, has resulted in insufficient protection of chimpanzees and their habitats across equatorial Africa. The bushmeat trade alone accounts for thousands of chimpanzee deaths each year. This has led to a dramatic increase in the number of orphaned and confiscated chimpanzees needing care, which in turn has resulted in a proliferation of sanctuaries. Fifteen sanctuaries now accommodate hundreds of chimpanzees and this problem is growing.

ROOT CAUSES OF THE NEED FOR SANCTUARIES



Currently there are no agreed guidelines for the coherent operation of the growing number of sanctuaries.

What follows are guidelines proposed by participants in the CBSG African Chimpanzee Sanctuary Workshop. Their principal intended readership includes all those involved in sanctuaries and those contemplating setting up new ones. It is our hope that making these guidelines explicit will facilitate communications with potential funding agencies and those from whom necessary permissions are required. Since our primary concern is chimpanzee welfare and conservation, our aim can also be thought of as providing guidelines that chimpanzees would approve.

ADVICE AND THE QUESTION OF ACCREDITATION

The guidelines set out below may offer a template for the preparation of Sanctuary Plans and operations for either existing or proposed new sanctuaries.

Advice on refining such a plan may of course be requested informally from any participant in the workshop. A matter for further discussion is whether any “umbrella organization” (Pan African Sanctuary Federation or Alliance?) will in future be prepared to act as a conduit for funneling requests for advice to the most relevant parties. A further step for consideration could be some kind of peer-reviewed accreditation process that would ensure certain standards in the Sanctuary Plan. All of this may be important to international funding organizations.

PLANNING

To ensure the achievement of the overall mission of any sanctuary it is essential to develop a comprehensive plan. This is especially critical as founding a sanctuary and assuming responsibility for chimpanzees involves a long-term commitment of resources.

Development of a plan is crucial in building credibility with external partners and stakeholders. A comprehensive plan will allow the development of a clear set of measurable outcomes, which are essential for generating political and financial support.

Planning Steps

1. Development of a mission statement

- Be concise
- Why do you exist? Spell out a reasoned explanation.
- Goals: What are you trying to accomplish (short-term, long-term)?
- What is the end-point? (e.g. long-term care or re-introduction to the wild? Should you be training a local staff and management group to eventually take over running the sanctuary themselves?)

2. Regional and National Framework

Define how the sanctuary fits into the broader regional, national and international framework of chimpanzee conservation. In this way the goals and objectives for the sanctuary can be more easily defined and made relevant.

3. Size and location

The size and location of the sanctuary will obviously depend on a variety of factors and will inevitably represent some level of balance or compromise between the ideal and practical.

Choosing a location for the establishment of a sanctuary must be closely related to the ultimate objective or role of the sanctuary. Some important considerations are

- The political and security situation of the area. This includes the support of the government at the national level as well as at the local level and an assessment of long-term security for both the staff and the chimps.
- Proximity to human development. Location in relation to human population is important to consider because of the risk of disease transmission. However, access to supplies, power and water is essential for the efficient running of the sanctuary. The location will also be an important determinant of the types of education and outreach programs that can be undertaken, as well as the ability to attract visitors. If future expansion is planned, the availability of suitable adjoining land should be considered.
- Range vs. non-range locations. When choosing a location, consideration should be given to whether the site is within the current or former natural range of chimpanzees. Important factors are: the potential for disease transmission between wild populations and the captive chimpanzees, the intent with respect to re-introduction to the wild, the educational component, and the ability to work with local wildlife officials. For non-range locations, thought should be given to ensuring the ability to properly contain the chimpanzees, avoiding release into a non-endemic area. Locations in non-range areas may provide opportunities for education of a wider and more diverse audience of people.

4. Source of animals

Potential sources are law enforcement confiscations and donations; they include chimpanzees that have been kept as pets, those rescued from sub-standard zoos and menageries, and orphans (by-products of the bush meat trade). Sanctuaries should not pay to acquire animals.

5. Finance

One of the most difficult aspects of forming and running a sanctuary is the issue of funding. A realistic financial plan is a critical part of the sanctuary planning process. The financial plan should address the initial capital costs for creating the sanctuary facility as well as the long-term recurring costs.

From a practical perspective, the development of a financial plan will normally start with the development of the expenditure side of the equation, segregating the capital costs from the projected recurrent expenditures.

The exact format of the financial plan will vary, depending on the project. However, it is probably better for the plan to be somewhat *reflective*.

Also important to consider is the source of the funding and the ethical question of whether to accept funds from certain sources such as logging companies (ethical funding).

6. Animal Welfare

Although it is taken for granted that the well being of the chimps is a primary objective for the sanctuary, adopting acceptable protocols and rehabilitation guidelines will as far as possible guarantee that the welfare of the chimpanzees is safeguarded.

Some of the most important animal welfare considerations are as follows: -

- **Housing:** Careful planning of appropriate and suitable housing is essential to ensure appropriate socialization and correct mix of individuals. Ensuring that the facilities are safe for both the chimps and their keepers is important. Durability and maintenance of the housing as well as environmental stimulation should be considered.
- **Veterinary:** Development of veterinary protocols should include information on vaccination procedures, research (i.e. blood tests), tranquilization, drug administration (antibiotics); birth control, etc.
- **Socialization:** In addition to the housing design, planning around how animals will be socialized and integrated into viable groups is important.
- **Research:** Although research is an important component of any rehabilitation effort, ensuring that any research takes place according to strict animal welfare guidelines is important. If not, research could compromise the health and welfare of the chimps within the sanctuary's care.
- **Nutrition:** Planning the feeding regimes will ensure that the chimpanzees are fed a balanced and interesting diet. If the sanctuary exists in an area where food occurs naturally it is suggested that a vegetation study is undertaken to ensure that the natural vegetation can provide the chimpanzees with a healthy and adequate diet.
- **Human/chimpanzee interaction:** Appropriate interaction between the human keepers and the chimpanzees is important to consider within the plan, most especially if re-introduction back to the wild is planned – i.e. disease transmission.

7. Staff and Administration

Sanctuaries should develop a written job description for the duties and responsibilities of all staff members, including both paid and non-paid positions. Clear delineation of duties and responsibilities will reduce internal strife as well as avoid replication of duties. An organizational chart showing the chain of command and the various positions will aid outside agencies in determining the types of activities being undertaken by the sanctuary and will clearly define to all employees how their role fits into the overall framework of the sanctuary.

Key positions and responsibilities to consider are:

- Director
- Veterinary/Health Care Manager and staff
- Daily/Routine Animal Care Manager and staff
- Education and Outreach Coordination
- Communication, Marketing, Fund Raising
- Facility Maintenance

CHIMPANZEE SANCTUARY MANAGEMENT POLICIES

This section outlines the principal issues that need to be considered in an operating sanctuary, from day-to-day to year-to-year timeframes. Several of these management policies are dealt with in detail in later sections.

1. Issues to consider when drawing up the criteria for chimpanzee acceptance into sanctuaries:

- Identify various sources of intelligence on the whereabouts of particular individual chimpanzees. These sources then need to be assessed, evaluated and substantiated.
- Potential candidates or individual chimpanzees then need to be assessed for admission to the sanctuary. Certain constraints will impinge upon the ability and necessity for an individual to be taken into care at that time, e.g. law enforcement capability or extent of debilitation of the chimpanzee.
- An issue that may need to be addressed in the future is the acceptance of individuals from other arenas including circuses, zoos and biomedical facilities both within and outside the African continent.
- The carrying capacity of the particular sanctuary needs to be fully outlined both in terms of total number capacity and individual sub-categories, i.e. age; disease susceptibility and risk assessment; previous contact with contagious and potential for infection and transmission.
- Occasions may arise when there is limited capacity. Under such circumstances provisions to prioritize should be put in place after a veterinary evaluation of the chimpanzee and its husbandry prior to admission. For example a healthy, well provided for individual would be low priority compared to an animal in a poor or debilitated condition. This would then be further categorized into infectious or potentially infectious vs. non-infectious or susceptible and significant risk.
- Under extreme circumstances euthanasia may be the only humane option available to reduce suffering of the individual in that particular situation.
- All entries should ideally be screened for various infectious agents and admitted into an area with some degree of separation from the existing colony to reduce the transfer of potential infectious disease.
- General screening could include: rectal culture; stool sample for endoparasite identification and cytology analysis; serum collection for antibody titre or antigen indicating potential previous exposure identification; vaccination; physical examination and TB testing.
- Other issues to consider at this point would be zoonoses and infectious agents between other species where applicable.
- The acceptance of animals across political and biological boundaries may be an issue to certain facilities. An attempt must be made to identify wherever possible the geographical location and probable population of origin of the individual. Genetic marker identification may also be considered to prevent unidentified cross-species/race integration.
- Procedures for the acquisition of individuals should be outlined and standardized. Issues such as the means of acquiring the individual need to be identified, i.e. donation vs. confiscation (IUCN document appendixes). If confiscation is required the responsible authorities (e.g.

police, park guards, obtaining necessary Cites permits) need to be contacted must be identified so that the process can be expedited in a timely, legal and appropriate manner. When suitable law enforcement agencies are unavailable then other procedures need to be considered.

- From the outset sanctuaries should never consider paying for chimpanzees.
- Lastly, in locations where more than one species of great ape exists in the region of the facility, a policy should be put in place stating whether one or more will be catered for. Justification for the decision that identifies unequal acceptance of a particular population of great apes is essential.

2. Care and welfare of chimpanzees

Sanctuaries are recommended to have written policies on all aspects of ongoing care and management of chimpanzees. These include the following considerations:

- Health: Arrangements for quarantine, hygiene, disease prevention, anesthesia, veterinary services, post mortems
- Reproduction: contraception
- Socialization/Integration
- Diet/Feeding regimes

These matters are dealt with in more detail in following chapters.

3. Recommendations for the release of chimpanzees back to the wild

For the purpose of this document, the working definition of release is “the return of captive chimpanzees into an area of natural habitat where they can be nutritionally self sufficient and socially independent from humans”. For a more precise breakdown of definitions refer to the IUCN/SSC guidelines for re-introductions.

At present the rationale for the release of chimpanzees can be described as having either a welfare orientated approach, or a combination of welfare and conservation. For example, the release of a limited number of individuals into an area devoid of wild conspecifics is primarily welfare motivated. A release which would allow for the possibility of reproduction, with either a wild population, or a continual restocking with sanctuary chimpanzees, promotes not only the welfare of individual chimpanzees but also addresses the wider issues of chimpanzee conservation. However, it should be recognized that release programmes primarily motivated by welfare do also have a range of implications for conservation, such as the direct protection of the release area, as well as potentially offering a more economical solution to the sanctuary model.

While certain sanctuaries may at the outset be able to specify their intentions towards release programmes, it is also possible that sanctuaries may consider release despite it not being in their initial agenda. Either way, before such a decision is reached there are many critical issues to consider. Some useful guidelines can be found in Sanctuary Management section of this document, but for more detailed information it is recommended to consult the IUCN/SSC Re-introduction Specialist Group guidelines, and a report produced by H.E.L.P. Congo (Laurence Vial, May 2000) the only such project currently releasing chimpanzees back to the wild.

It is important that the release process is fully documented to allow modification of techniques employed and to facilitate the communication of information to others considering implementation of the release. The long-term collection of scientific data can evaluate the viability of the release.

4. Research

There are many kinds of research. For example studies might be purely observational (projects involving no contact or intervention at all) or experimental (and that in turn could range from innocuous tests of exploration Behaviour to studies requiring taking physiological measures that may raise more obvious ethical dilemmas).

All sanctuaries are advised to adopt an explicit policy on research. Research may be done by members of the sanctuary itself or by guest researchers. Initiatives by the latter may require a re-evaluation of specific research policies.

A sanctuary may decide not to have any involvement in research. However, there are several potential benefits.

a. Benefits of involvement in research

- Financial. Chimpanzees' participation in research might be coupled with a component of a research grant designated as a "research fee" or "animal care and maintenance". Where research is undertaken by an external agency (e.g. a University), such a fee might be a subject of negotiation. Income of this kind could make a significant contribution to operating costs, or to other activities like education.
- Status and publicity. Collaboration in research can raise the profile and perceived value of a sanctuary.
- Benefits to chimpanzees in general. The greater understanding of chimpanzees gained through research may ultimately benefit the species in a variety of ways. Findings that illustrate close commonalities with human nature can play a particularly important role in the willingness of humans to take chimpanzee welfare and conservation seriously. For example, research publication on chimpanzee cultural variation recently gained high profile publicity, underlining the similarities between chimpanzees and ourselves; such media attention appears to be profoundly influencing people in richer countries, who are the most likely to provide donations to sanctuaries, and sanctuaries lend themselves to further research of this kind. People close to logging and bushmeat activities may also be affected by these messages. For example, the showing of videos in local Zairian villages of bonobos like Kanzi using sign language and solving complex problems was reported by one local participant to have elicited from his father (who had eaten bushmeat all his life) the exclamation "this ape is so like me I cannot eat him any more".
- Benefits to the specific chimpanzees studied (or others in the sanctuary) depend on a number of factors, including:
 - Where chimpanzee accommodation is sufficiently constrained that enrichment is desirable, certain research projects may provide this, for example, in problem-solving tasks.
 - Where chimpanzees are destined for rehabilitation, studies of the learning process may facilitate and document success.

- Research may be targeted at specific projects valued by the sanctuary, such as the best way in which to introduce new resident chimpanzees.

b. Problems in research collaboration

Research will obviously be rejected if it may compromise the welfare of chimpanzees.

A different problem arises through collaboration with researchers themselves. For example there could be personality and attitudinal clashes. Researchers may also place additional time and resource pressures on the sanctuary. One way to guard against commitments that could become problematic is to negotiate a research contract that identifies areas of concern and the actions that should be taken should difficulties arise.

CONSERVATION POLICY

Conservation Mission Statement

Conservation policies should encapsulate the promotion of existing and new programmes for the protection of wild chimpanzees and their habitat. We believe sanctuaries are obligated to accept and care for orphans until the root causes of the orphan crisis are eliminated.

Every sanctuary is encouraged to have an explicit conservation policy included in their mission statement. This might emphasize the overall aims of reducing the number of new orphaned chimpanzees needing homes and protecting remaining wild populations and their habitats. These conservation policies should reflect the skills, resources and abilities of the individual sanctuaries. This does not mean that they cannot increase their resources by accessing funds to actively address conservation issues. It has been noted that a sanctuary that adopts a workable conservation policy is more likely to gain support from international and national funding bodies and policy makers since sanctuaries have an important role in the wider conservation debate.

It was generally agreed that sanctuaries unable to re-introduce their captive chimpanzees into a viable wild environment should adopt a policy of no, or strictly controlled, breeding. This will reduce the risk of a sanctuary exceeding its carrying capacity and finances. Allowing uncontrolled breeding of captive chimpanzees would reduce the space available for the growing number of orphans in need of sanctuary.

There are essentially three ways to assist with wild chimpanzee conservation:

1. Target groups

The main groups to target could include:

- Regional, national and local policy makers
- International policy makers
- Law enforcement officers
- Academic institutions
- Local communities

- Hunters/poachers
- Farmers
- Logging companies and industries
- Tourists
- Expatriates
- International and national NGO's
- Conservation community
- Embassies
- School children
- Traditional and non-traditional religions/leaders

2. Educational tools

Sanctuaries should endeavor to expose as large a sector of the general public as possible to the unique and special status of chimpanzees and the issues effecting their long-term survival.

We can distinguish three components of education:

- b. Casual visitation;
- c. Solicited visitation;
- d. Outreach programmes

There are varied means for promoting awareness of the problems facing chimpanzees and their habitats, and encouraging efforts to resolve these issues. Some tools to consider:

- Radio and television programmes
- Newspapers and magazines
- Workshops
- Field trips
- Interpretive materials (display boards, signs etc)
- Educational packs
- Newsletters
- Handouts
- Displays, exhibitions and posters
- Creation of Nature Clubs
- Comic books
- Utilizing local conservation values
- Mobile education audio-visual units
- Organized lectures
- Organized visits to the sanctuaries
- Websites and e-mailing

3. Enforcement

A sanctuary simply cannot exist without acknowledging the need to support the official conservation enforcement agencies. Sanctuaries are well placed to speak of the issues regarding enforcement since they are dealing directly, on a near day to day basis, with the results of the bushmeat and pet trade, and the destruction of habitats resulting from a lack of sufficient environmental and wildlife law enforcement.

Efficiently run sanctuaries can provide agencies with a facility to care for confiscated or donated chimpanzees. In addition, they should have a policy regarding the species they can accept and try to offer the authorities a solution for other illegally confiscated species.

Depending on their regional situation, sanctuaries may either have to encourage national and international policy makers to introduce new laws to enforce the protection of wild chimpanzees and their habitats, upgrade existing enforcement systems or support present working enforcement, through their adopted education programme.

The enforcement agencies to approach will likely be:

- Wildlife Conservation/Game Departments
- Police
- Military
- Customs officials
- Presidential guards
- Private security forces (e.g. logging companies)

RE-INTRODUCTION

(See chimpanzee management policies above)

COMMUNICATION AND PUBLIC RELATIONS POLICIES

From the outset of establishing a sanctuary, communication and public relations with the local community and government, NGO's, private sector, international and national agencies, industries, the scientific community and the general public are imperative. This should be incorporated into the planning process, documented and used to promote the goals of the sanctuary and associated ape conservation. Regular communication will help to create a sense of global involvement and responsibility. It should raise awareness in every public arena and help to raise funds.

Ideally, media productions will create an understanding of the underlying root cause for sanctuaries and stress that although necessary it is not an ultimate solution. However, it is currently the most effective way to deal with orphaned/confiscated chimpanzees.

Sanctuary activities should also aim to educate the press in ape-related issues and demonstrate that sanctuaries are not the ultimate solution to wider conservation and exploitation issues.

MEDIA ACTIVITIES

The media can play an important role in helping to create a positive image of the sanctuary, their goals and their role in conservation of wild. The local, national and international media can be used to reach a wider audience.

Media activities can take the form of local, national or international papers, newspaper or magazine articles, TV documentaries, films and the Internet.

1. Press packs:

In an effort to influence the media message that fairly represents and interprets the sanctuary goals, we would strongly recommend the development of an official press pack. This should include the mission statement, background information, sanctuary goals and objectives, background on broader chimpanzee conservation related issues and any other information the sanctuary feels necessary to include.

Sanctuaries need to produce multi-lingual press packs, particularly when considering local media outlets.

2. Visual aids:

Visual presentation aids, including video may also be useful lobbying tools and incorporate a range of issues surrounding the needs of the sanctuary. They may portray the complexities of the situation faced by the sanctuary. At the site itself such visual aids could also educate the visitor about the goals of the sanctuary, ape-related exploitation issues and incorporate local community and government participation in the project.

MEDIA SUGGESTIONS

Working Group Participants:

Lori Federman

Lucy van Beek

Sanctuaries should make an effort to build trusting relationships with production companies and with individual filmmakers, reporters and journalists to promote the work that they do within the sanctuary.

To save time and to make sure that sensitive issues are addressed sanctuaries could take into consideration the following suggestions and include them in a filming pack. These should be discussed at the outset with any production company wishing to film the sanctuary:

FILMING PACK

- General Information- mission statement, media pack, any education package you have available.
- Contact List- in-country and overseas sanctuary representatives, local fixers who have worked with film crews before and can provide visas, invitations to work in the country, transport, translators, hotel accommodation
- Location Logistics - suggested transportation and distances from airport, nearest town, etc., weather- rainy season, or best time to film
- Facility Fees - the type of production and the number of days they are staying at the sanctuary should be considered. e.g. education programmes do not have big budgets, whereas production companies making adverts can afford more.
- Sanctuary's own film footage - if a production company wishes to use a sanctuary's own footage the sanctuary should think about drawing up a "Film Footage Licence Agreement". This could state a fee for using this footage for a minute or part thereof in their programme. The fee should depend on how the footage will be used.
E.g. Worldwide, all media, in perpetuity rights - \$x per minute or part thereof. These agreements should be negotiable depending on the production and the amount of footage they would like to use.
UK, television rights, for 10 years – \$x
- Sanctuary's own stills footage (see above)
- Scientific Advisors: Suggest suitable scientific advisors for programmes

OTHER CONSIDERATIONS

- Credits - a credit should be requested at the end of the programme for both the sanctuary and possibly important sanctuary associates. (e.g. for Ngamba, this would include Born Free Foundation, Jane Goodall Institute, IWAF, Uganda Wildlife Authority and Uganda Wildlife Education Centre.)
- Fundraising Contacts - request that contact information on how to help the sanctuary is made available at the end of the programme or on their website. This could include the address, phone number and website of the sanctuary and associated organisations.
- Sensitive Issues- portraying chimpanzees as “pets,” exclusion of local people, exclusion of the root causes (bushmeat, logging)
- Rushes: It is possible to request VHS copies of rushes for educational purposes (this will not always be legally possible)

COMMUNITY PARTICIPATION

Media and public relations should aim to encourage community participation and establish a sense of involvement and responsibility. Community participation should then be reflected within the global media produced by or for the sanctuary.

Communication can be pursued by:

- Community relations liaison from sanctuary/local head liaison
- Local workshops
- Assessment of views on and involvement with chimpanzees in the community
- Education programs for local schools and the broader community perhaps arranged by an appointed education coordinator facilitated by an education packet.

COLLABORATION

It is essential for chimpanzee sanctuaries to collaborate with various agencies, which include governmental, non-governmental, private sector and other sanctuaries in achieving their goals. Collaborations might include:

- Lobbying governments for improvements in chimpanzee welfare standards and conservation efforts, which include education with respect to illegal logging and the bush meat trade.
- Collaborating with the scientific and conservation community i.e. IUCN for accreditation and management related research.
- An exchange programme between keepers and volunteers to enhance sharing of experiences.
- Collaborating with NGO’s when seeking for funds.
- Acting as a partner with governments in sensitizing industries that perpetuate the problem of increased orphaned chimpanzees through logging and resulting bush meat trade.
- Networking with other sanctuaries to maintain and improve standards of chimpanzee welfare.
- Collaboration with local, national and international universities and educational institutions.

TOURISM

- An appropriate tourism program within the sanctuary can provide financial benefits to the local community and educational opportunities at both local and international level.
- The welfare of the chimpanzees must remain the priority of the sanctuary and should never be compromised for the sake of tourism. Some sanctuaries may consider that visitor/chimpanzee contact does not compromise welfare. If this is the case, then issues such as human-chimpanzee disease transmission and the image portrayed to the tourist in the contact should be seriously considered. Contact may dilute the educational message of the sanctuary.
- Tourism can be used as an opportunity to educate and raise awareness of the issues to a wide audience of people. Any display materials, or presentations should be produced to suit the audience, its requirements and may be in more than one language.
- Local education may involve community workshops and school visits (see the conservation policy section for details of educational tools).
- International visitors to the sanctuary may be educated through a variety of methods – the experience itself, educational displays and a good guide. There is also the opportunity to provide leaflets through tour operators to educate international visitors.
- With regards to international tourists, we suggest developing a working relationship with a local or outside tour operator to handle international bookings.
- The Internet may be used as an important promotional tool both for the issues and possible tourism programs.

VOLUNTEERING POLICIES

Some sanctuaries may consider volunteers to play an essential role in the running and maintenance of the sanctuary, whilst others will disagree.

- Volunteers may not be qualified to work on chimpanzee management issues, but may have other skills to offer. For example fund-raising experience, publicity, accounting, photography, education, filmmaking. However, some sanctuaries may feel that mechanical, constructional, electrical and other practical life skills are more important volunteer qualifications.
- Volunteer recruitment. It may be worth considering developing a relationship with an outside body to run a volunteer recruitment scheme on the sanctuary's behalf. Such a body will be able to interview and vet the appropriate candidates and reduce the number of unsuitable volunteers reaching the field.
- Local and international researchers. Consider the involvement of local students and volunteers as a major part of the volunteering program. Exchange programs between local and international countries may be considered as a method of providing training for local students.
- Time limit. To prevent continual training and a high turn over of volunteers, sanctuaries may wish to consider a minimum service.
- Sanctuary information and qualifications needed. Detailed information about the sanctuary's work, its long term goals, whether living costs need to be covered, is accommodation provided, cultural beliefs of the country, qualifications required, guidelines on appropriate social behavior and equipment should be sent to the volunteer prior to the visit.
- Age limit. To ensure volunteers will be culturally sensitive, and have appropriate worldly experience, the sanctuary should consider a minimum age.
- Terms and conditions of stay. A contract should be drawn up detailing the terms and conditions of volunteering at the sanctuary. The contract should include clauses on termination and disclaimers against injury.
- Health of volunteer. To reduce the risk of disease transmission from human volunteers to chimpanzees, sanctuaries may wish to insist on a full medical before they leave their native country.
- Training of volunteers. To reduce the continual need for sanctuaries to train up new volunteers, sanctuaries should consider providing groups of regular volunteers with training courses. This could include members of the local community. Another possibility to consider in terms of local participation is to train a local manager to supervise and/or train the volunteers.
- Crisis volunteer network. In situations of crisis sanctuaries may find it necessary to call for volunteer help at very short notice. The development of a crisis volunteer network would ensure that sanctuaries have access to a volunteer database at all times. This network would provide information on a national and international level and provide information about volunteer qualifications, areas of expertise, contact details and availability. This network will require a co-ordinating body to set up and update records of volunteers. It would be up to the volunteers on the network to notify the co-ordinating body of any changes or if they wish to be removed.

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 4

**Sanctuary Management:
Behaviour, Reproduction, Husbandry, and Health**

Sanctuary Management: Behaviour and Reproduction Working Group Report

Working Group Participants:

Facilitator: Professor Richard Wrangham, Harvard University
Josephine Afema, Uganda Wildlife Education Centre
Carol Keys, Donor
Chris Mitchell, Cameroon Fund for Animal Welfare
Cherie Montgomery (Monty), Jane Goodall Institute-Uganda
Estelle Rallaband, Project Primate/In Defence of Animals
Ashley Vosper, Massey University
Sam Ubi, Pandrillus

Problem Statement:

The natural, species-typical behaviours of chimpanzees in the wild can be considered as the means by which they survive in their native environment. In a captive environment, behaviour, to a large extent, can be considered as a reflection of how well the psych-social needs of the chimpanzee are being met. It is virtually impossible to duplicate in a captive environment every detail of the conditions in the wild. Not only is this not physically possible, the necessary depth of information has not yet been gathered to provide an adequate understanding of these complex wild ecosystems. Therefore, there is a need for sensitivity to a wide range of behavioural aspects.

Common Objectives and Long-term Development:

The goal of behavioural management is to allow the chimpanzees to express their natural behaviour as much as possible subject to the individual welfare of each chimpanzee and the constraints of the individual facilities.

Goal:

Creation of a manual that encourages best practices in behavioural management across sanctuaries and maximizes accessibility of this information.

Recommended Activity:

For each sanctuary to work towards a shared database on behavioural procedures and outcomes, this may be achieved through the creation of a questionnaire to be compiled by each sanctuary briefly outlining suggestions on behaviour management procedures under a number of subtopics (e.g., integrations, hand rearing, etc). This information will be discussed, collated and edited at the Cameroon Conference in May 2001.

More specific recommendations include:

- Establish an exchange program between sanctuaries and other institutions throughout the world to promote sharing of knowledge and experience in caregiver management.
- Sanctuaries should be encouraged to develop or adopt a common ethogram (standardized definitions of behavioral categories) for collection of observational data.
- Development of an enrichment manual to be shared throughout sanctuaries (see Yaounde Zoo manual for starting point).
- Consult widely in order to take advantage of novel strategies regarding separation and integration.
- Consult widely in order to take advantage of novel strategies regarding separation and integration.
- Group size should attempt as much as possible to mimic the situation in the wild, therefore unnatural group compositions, such as multi-male groups, should be avoided whenever possible.
- Any observation of abnormal behaviour be reported in written form to the sanctuary manager as soon as possible.
- Decisions about reproductive control methods should always take into account behavioural consequences.
- Sanctuary managers should be alert to social learning and reinforcement training as behavioural management tools.
- Hand-reared infants should have as much social contact as possible whether with peers, conspecifics of any age or human caregivers. Conspecifics and peers being top priority
- Chimpanzee natural dietary behaviour should be considered and mimicked as closely as possible to promote physical and psychological well-being.

(See appendix on Behavioural Management for further information and recommendations on the above-mentioned topics.)

SANCTUARY MANAGEMENT: Health Working Group Report

Working Group Participants

Facilitator: Wayne Boardman, UWEC
Josephine Afema, UWEC
Peter Gray, David Greybeard Sanctuary
Peter Jenkins, Pandrillus
Claudia Schoene, University of Onderstepoort
Sheri Speede, In Defence of Animals
Laurence Vial, HELP
Diccon Westworth, University of California

We would like to acknowledge John Lewis, International Zoo Veterinary Group, Keighley, UK for his contribution to this draft manual.

INTRODUCTION

This Health Care Manual was formulated by a sub-committee of contributing veterinarians and physicians in keeping with the spirit of the Great Ape Project. The Great Ape Project recognizes, as do most chimpanzee sanctuary operators in Africa, that chimpanzees, as Great Apes, are in a moral category of beings similar to that of humans. Euthanasia is not considered here as a solution to any problem beyond the relief of individual suffering.

QUARANTINE

Quarantine in the broadest sense is the separation of newly received chimpanzees from those already in the facility until the health of the new chimpanzees can be evaluated. The purpose of such isolation is to prevent the introduction of infectious disease to the resident population e.g. parasitic, fungal, viral or bacterial. In addition, during this period new chimpanzees can become accustomed to their new diets and housing, and baseline medical data can be gathered.

Quarantine procedures must be applied rigorously. An all in all out policy is the most effective procedure. Given that the origin of chimpanzees coming into the captive group has usually involved close contact with man for (often) prolonged periods, the potential for disease is high. Furthermore, the purpose of the project maybe to provide chimpanzees for release into the wild. Thus, any disease present in the captive group may be transmitted to wild primate populations with potentially devastating consequences. However, it is acknowledged that, at present, financial and practical considerations may limit the degree to which disease-screening tests can be applied. The protocols described therefore represent an ideal situation towards which the project should aim.

Quarantine facilities should be as physically isolated as possible from the other enclosures. Ideally at least 20 metres should separate newly arrived chimpanzees from the resident groups and if a physical barrier can be placed between them, so much the better. Ideally, quarantine facilities should be sited downwind and downstream of the resident groups where wind is predictable. Personnel working with quarantined chimpanzees must observe established procedures to prevent cross-contamination to resident chimpanzees. These procedures involve

scrupulous personal hygiene, the use of separate equipment (such as feeding bottles, cleaning brushes etc), footwear and clothing for quarantined chimpanzees and the thorough disinfection of all such items after use each day. In an ideal world different staff would care for quarantined chimpanzees. This is rarely practical, but at least contact with quarantined chimpanzees should always **follow** contact with resident chimpanzees and never vice-versa. (For example: feed and clean resident chimpanzees, **then** feed and clean quarantined chimpanzees, **then** wash thoroughly.) Such isolation procedures should also be applied to any chimpanzees in the resident groups that becomes ill and requires treatment.

A minimum quarantine period of 90 days is recommended. In certain circumstances it may be wise to increase this period to 6 months (e.g. for an chimpanzees which are known to have been in contact with tuberculosis). During this period the following procedures should be carried out:

STABILIZATION PERIOD

A period of at least one week should be allowed for "settling in". During this time, the chimpanzees may adjust to its new environment, food preferences and behavioural patterns can be assessed and a medical record established. Clearly, current medical problems may require immediate attention during the first week.

FULL PHYSICAL EXAMINATION UNDER GENERAL ANAESTHESIA

This should include an assessment of general health & condition, age, weight, dental health, external parasite burden, previous injuries etc. A means of permanently identifying the chimpanzees should also be employed at this stage - egg tattoo or subcutaneous microchip transponder.

During the stabilization period, blood and serum samples should be taken for routine haematology (including screening for anaemia & blood parasites - especially malaria) and serum biochemistry, hepatitis A, B and C tests (serum) and serological testing for SIV (Simian Immunodeficiency Virus) and HIV infection.

It may also be wise to submit serum to test for a panel of other human and primate viruses.

If a freezer is available additional serum should be taken and stored at minus 20° C (preferably – 70C) for future reference in a serum bank. Further serum samples should be taken and banked opportunistically, both within the quarantine period and afterwards. Ideally cells for DNA isolation should be stored.

The full panel of serum tests that would be of interest would include:

Alpha-herpes viruses, Arenaviruses, CMV, Enteroviruses, Filoviruses, Flaviviruses, Foamy viruses, Hepatitis A, Hepatitis B, Hepatitis C, Hepatitis E, HTLV/STLV, HIV/SIV, Measles, Monkeypox, Tetanus, Toxoplasmosis.

Haematology profile: Complete Blood Count, Fibrinogen

Biochemistry profile:

Sodium	Potassium
Urea	CPK
Creatinine	Glucose
ALT	Total bilirubin
Gamma GT	Alk. Phos.
AST	Protein
Albumin	Globulin
Calcium	Phosphate
Cholesterol	Triglyceride
LDH	CPK

Urinalysis: using a dip stick plus possible submission to laboratory for cytology

Faecal samples should be assessed for the presence or absence of internal parasites on at least three occasions during the quarantine period [the first sample could be taken from the rectum during **the examination** if possible.

Samples should be examined by direct microscopy and by a floatation technique. Where parasites have been detected and subsequently treated, further tests should be carried out during quarantine to establish that treatment has been successful.

NB: The numbers of helminth eggs per gram of faeces examined is often directly related to the clinical severity of infestation. However, in severe diarrhoea, due to a dilution effect. Large numbers may not be seen. This is not the case for protozoa. Therefore, in the case of chimpanzees with diarrhoea and a high faecal protozoal count, it is wise to consider other primary causes before ascribing the problem solely to the protozoan identified

DEWORMING

Ivermectin//Milbemycin/Moxidectin should be administered every 2-4 weeks during quarantine. (Since TB tests are conducted monthly, dosing at this time may be most convenient). (However if lice or scabies are detected then dosing at 2 week intervals is preferred)

Pyrantel/Mebendazole/Albendazole should also be given early in the quarantine period, (hookworms and ascarids may not be susceptible to Ivermectin//Milbemycin/Moxidectin) and if parasites are confirmed on faecal examination, treatment should be repeated in 2-3 weeks.

Praziquantel can be used if tapeworms are confirmed.

Deworming every 6-12 months should occur regardless for all chimpanzees.

Rectal swabs in transport media should also be submitted to a bacteriology laboratory to establish the presence or absence of pathogenic bacteria (especially salmonella, klebsiella, shigella, campylobacter spp etc). Given that organisms such as salmonella spp are not necessarily shed in the faeces continuously, three separate samples should be submitted during the quarantine period (most conveniently part of the same samples submitted for parasitology). Where pathogenic or potentially pathogenic bacteria have been detected and appropriate treatment given, further tests should be carried out within quarantine to confirm that treatment has been successful.

Tuberculosis testing

One of the most likely problems that may arise is the introduction of tuberculosis into the chimpanzee group. Tuberculosis is not thought to be particularly prevalent in those wild primate populations that have been studied, but may readily become established in newly caught primates which come into close contact with man. Given that tuberculosis is common in the local human population, it would be surprising if at least some of the rescued chimpanzees were not either carrying the disease or suffering from it. Should tuberculosis be introduced it may be extremely difficult to eradicate and the long-term consequences could be disastrous.

Each chimpanzee should therefore be intradermally tested for TB on three separate occasions during the quarantine period, with one month between each test.

Each test consists of an **intra**dermal injection of 0.1ml Mammalian Old Tuberculin (MOT) into the skin of an upper eyelid (alternating sides on successive tests) under sedation, and observation of the local reaction at 24hrs, 48hrs and 72hrs. MOT may not be available if so human PPD may be used as an inferior alternative.

NB: Intradermal testing of juveniles < 1 year old may not be accurate due to immaturity of the immune system. In young chimps, skin on the inside of the lower arm can be used to avoid anaesthesia.

Other tests for tuberculosis are desirable although not readily available yet in the field. (These tests include lymphocyte transformation tests (LTT), polymerase chain reaction (PCR) tests for mycobacterial DNA in tracheal washings, culture of sputum and tracheal washings, serum gamma-interferon tests egg PRIMAGRAM, serum ELISA tests for antibodies to mycobacteria and comparative tuberculin skin tests (easy to do but access difficult in the field).

NB: It is essential to understand that the test must be done intradermally and will NOT be useful if given subcutaneously as then a false negative result will frequently occur

Incoming chimpanzees that clear these tests are considered free of tuberculosis and can be introduced into the resident group after all other quarantine procedures have been carried out.

NB: It must be noted that chimpanzees suffering from the later stages of clinical tuberculosis may skin test negative due to an immunologically depressed state known as anergy. Thus any very thin or weak chimpanzee, or one suffering from a chronic respiratory condition should be treated with extreme caution and suspicion.

NB: Chimpanzee testing positive: see "Tuberculosis control" section below.

NB: The intradermal tuberculin test for tuberculosis is far from infallible, but at present it is the best available. In the future it is hoped that more specific tests will be available.

Appropriate vaccinations should be given during the quarantine period provided that the routine haematology/biochemistry described during the clinical examination demonstrate no current disease. It is important **not** to vaccinate at the same time as carrying out TB testing.

To identify subspecies tissue samples should be taken during the quarantine period for genetic analysis (for karyotyping etc).

All chimpanzees who die during the quarantine period must be necropsied according to the protocol given in appendix 3.

TUBERCULOSIS CONTROL

In addition to the tuberculosis testing programme applied during quarantine, further ongoing measures should be adopted to detect and prevent this disease in the resident chimpanzee population. After 6 months some facilities retest the resident group. Some test the chimpanzees in the core group annually. Other sanctuaries test opportunistically.

Given that the sanctuary will be visited on numerous occasions by interested persons, sponsors etc, a certain degree of protection should be afforded by the provision of (at least) stand-off barriers creating a minimum distance of 10 meters between chimpanzee and people.

Chimpanzee testing positive in quarantine or at any time thereafter:

Any chimp that tests positively repeatedly shall not be a candidate for release.

Any chimpanzee that tests positive for TB should be isolated without delay as far away from the core group and any other primates as is practical. If TB tests are consistently positive, further diagnostic procedures should be performed. Furthermore, all individuals that come into contact with this animal should be placed in 90-day quarantine and should be tested 3 times at 1-month intervals to confirm they are negative

These tests should include chest X-ray and a comparative skin test with Avian Tuberculin. In addition a sample of tracheo-bronchial mucous should be obtained by bronchial lavage and a Ziehl-Nielson (ZN) stained smear of this material should be examined directly for mycobacteria. A further sample of tracheo-bronchial mucous should be cultured for mycobacteria and sent for PDC if possible. If active TB is confirmed, treatment with triple antibiotic therapy i.e. rifampicin, ethambutol and isoniazid should be started immediately and continue for 12 months. If active TB cannot be confirmed, triple therapy for 12 months should also be considered.

If diagnostic tests cannot be performed, all chimpanzees showing consistently positive results should be treated with triple therapy for 12 months.

NB: In order to ensure uniformity over many years, suspicious or positive reactions should be photographed, how they were scored recorded, and an album of reactions maintained. This would help maintain uniformity of standards, and help new volunteers understand the interpretation of the test.

CONTROL OF ENTERIC PARASITES

Faecal examinations should be carried out for the presence of internal parasites and pathogenic bacteria at 6 monthly intervals. This may be possible for each individual chimpanzee before it joins the core group, but will be difficult for chimpanzees within the core group. In these circumstances a number of representative samples should be taken from the group.

Whilst a low level of parasitism will be inevitable, any significant parasite burden in the chimpanzees should be treated. Following treatment, further faecal samples should be examined to confirm that the parasites concerned have been effectively eliminated.

VACCINATION

There is value in vaccinating the chimpanzees against tetanus, poliomyelitis and possibly measles and rabies. When vaccines are used, the type, batch number and source of vaccine should be recorded in the medical records. The following schedules are recommended:

Tetanus:

Three intramuscular doses of tetanus vaccine (each containing 40iu of tetanus toxoid = 0.5ml) are given at 2 - 3 month intervals, starting at 3 months of age. Intramuscularly boosters are given after 5 years and at 10-year intervals thereafter.

Polio:

Three doses of live trivalent polio vaccine (containing live attenuated strains of poliomyelitis virus, types 1, 2 & 3) are given at 2 - 3 month intervals. This may be started at 3 months of age (or earlier if a particularly high risk exists). Oral boosters are given after 5 years and at 10 year intervals thereafter. These vaccines have been found to be safe and effective in primate species. It is important to give the oral polio vaccine to all chimpanzees in a group at the same time. This is particularly important with the first dose of any course. Keepers that have been vaccinated

during the previous 7 days should not be working with unvaccinated chimpanzees. Keepers should of course all be vaccinated up to date.

Measles:

This is not universally recommended. Vaccinate with subcutaneous, live, hyper attenuated monovalent vaccine at 15 months or more). Live measles vaccine should not be given at the same time as other vaccines or to chimpanzees with other infections or to any immunosuppressed chimpanzees as the vaccine may itself cause temporary immunosuppression. An intramuscular booster is given after 10 years. Do not give to pregnant females. This vaccine has been linked to autism and juvenile chronic diarrhoea in humans.

Rabies:

If there is a high risk of rabies, it may be advisable to vaccinate - using killed vaccines only.

Do not vaccinate against tuberculosis. BCG confers variable protection in man and short-lived protection in non-human primates. Furthermore, as there is no way of distinguishing between tuberculin reactions due to BCG or natural infection, the usefulness of the tuberculin test will be lost. egg: Should a TB+ve chimpanzees be inadvertently added to a "clean" group, vaccination would make it almost impossible to identify infected in-contact chimpanzees and therefore the degree of spread.

Do not use the triple vaccine known as DPT or DTP (diphtheria, tetanus and pertussis). There have been a large number of adverse reactions recorded in other primates and they are not particularly susceptible to diphtheria or pertussis.

DENTAL HEALTH

Chronic dental and gingival disease can give rise to potentially life threatening illnesses, thus the importance of dental health should never be underestimated. During routine physical examinations (egg: whilst chimpanzees are sedated for TB testing during quarantine or subsequently) close attention should be paid to the condition of teeth and gums. Any appropriate treatment should be instituted as soon as possible.

DENTAL FORMULA of adult chimpanzee = $\frac{2-1-2-3}{2-1-2-3}$

DENTAL ERUPTION

INCISORS	CANINES	PREMOLARS	MOLARS	REFERENCE
Deciduous	60-200 d	256-565 d	84-431 d	Mooney et al. (1991)
Permanent	59-92 m	96-121 m	73-100 m	36-163 m Smith et al. (1994)

ZOONOSES/STAFF HYGIENE.

All efforts must be made to minimize the risk of disease being spread from humans to the chimpanzees or indeed vice-versa.

Before allowing staff to work with chimpanzees, staff should be tested for TB (skin test and radiology if possible) hepatitis A, B and C and ideally HIV infection. In an endemic area many people will test positive on the intradermal skin test for TB. If a staff member who has tested positive exhibits coughing or weight loss at any time, that staff person should be removed from contact with chimps and diagnostics performed. If a staff member tests positive to TB and HIV, then he/she should not be allowed contact with chimps. Staff members should be regularly vaccinated against polio, tetanus, hepatitis B. Ideally all staff should undergo tests every six months for tuberculosis (intradermal test), hepatitis B and ideally HIV throughout their period of employment. Annual chest X-rays are also desirable. **(NB: HIV+ve people are far more likely to contract TB than HIV-ve people, and hence are at greater risk of becoming carriers or spreading the disease.)**

All members of staff must agree upon these issues.

All staff should undergo 6 monthly faecal testing for gastrointestinal parasites and bacterial pathogens. All parasite burdens and pathogenic bacteria should be treated. The first faecal test should be conducted before new staff come into contact with chimpanzees. Where this is not possible, staff should be wormed every 3 months.

New members of staff should not have any contact with chimpanzees for the first two weeks of employment. This should allow sufficient time for the development of most infectious diseases should staff be incubating any at the time of appointment. The two weeks should also allow sufficient time for faecal and blood testing and vaccination where appropriate.

Any member of staff suffering from respiratory symptoms or diarrhoea should not work with the chimpanzees until fully recovered. Consider some may shed chronically as a carrier status. Staff suffering from infectious skin diseases such as scabies should also be isolated from chimpanzees.

Standards of personal hygiene must be very high amongst chimpanzees' staff, although this may be easier to state than implement! Spitting, urinating or defaecating in the compound other than in the toilets must be strictly forbidden. In order to reduce the possibility disease spread between chimpanzees and humans, when handling chimpanzees at close quarters (egg when anaesthetised) staff should wear disposable gloves and a simple facemask.

Staff should advise any incidence of disease in their family members. Egg colds, flu, measles, chicken pox. Staff should stay away from chimpanzees until the end of the incubation period of the specific disease.

Staff should wash hands properly with soap and water before and after preparation of food, entering enclosures, contact with chimpanzees and after going to the toilet. Staff should shower at least once daily.

Separate feeding utensils and cleaning tools should be used for each enclosure

Footbaths should be used at the entrance to enclosures. Organic material cannot be disinfected so foot grates/steel brush can be used to remove material.

All food and excrement waste should be removed daily from the enclosure. The material should be placed in a pit and burned regularly.

ESCAPE

It is essential to have a well-formulated plan outlining procedures to be undertaken should an individual escape. Escape should be prevented and measures put in place to review structural and procedural tasks to eliminate such potential. This is especially so when housing adult unpredictable individuals. It is imperative that no general panic ensues following an escape (shouting, running etc) as this may further precipitate the situation. Instead a coordinated approach involving well-rehearsed drills should result in capture and restraint with minimum excitement.

Communication between all involved staff on the condition of the individual (injured, aggressive, etc), the general situation (location, numbers and identification of the individuals involved where possible), and whether the animal is contained within the compound of the facility or has ranged further a field. If the individual is outside the facility its proximity to villages or roads is also essential to be communicated.

The written standard operating procedure should be easily adapted for various situations and must involve all staff that may be present at all times. The plan should then be incorporated into practiced drills and then carried out under various conditions including controlled/known times and confused/spontaneous circumstances so that the procedures become well known.

Immobilization is the most common method of re-capture. Other methods to consider in young or calm individuals are; hand-catching, netting, enticement using food rewards. Only in situations where there is likelihood of severe damage being inflicted that cannot conceivably be prevented could the use of a gun could be considered.

An immobilization kit should always be readily accessible with all the contents checked for presence and working order. Persons proficient and adequately trained in using the equipment should be designated. We would recommend Zoletil (Telazol) be used at a dose of 4mg/kg.

The individual(s) should then be carefully observed to ensure evidence of sedation (initial effects) and precautions taken early to prevent injury to the escapee, especially if at height or in a potentially dangerous/damaging area. Blankets, catch nets, or mattresses can be used to reduce injury.

Once fully sedated, careful approach and reassessment of level of consciousness should be ascertained. An assessment of vital signs and physical examination for injuries should be conducted and therapeutic measures carried out as required. All stages of the procedure of immobilization should be timed and recorded including doses. Standard anaesthetic monitoring

procedures should be followed, paying careful attention to capture induced hyperthermia. The individual should then be allowed to recover in a dark, quiet environment and monitored closely.

Later, once all other enclosures have been checked for security and all individuals accounted for, the reason for the escape should be elucidated and preventative measures outlined and enforced.

STAFF EMERGENCIES

A first aid kit should be available for emergency treatment of injuries in staff.

The first aid kit must be routinely checked and any missing drugs/bandage material replaced immediately when missing or older than their expiry date. Staff should be trained on how to provide first aid. Ideally, an emergency procedure plan should be set up with a nearby hospital.

In case of an emergency the hospital should be notified immediately and the injured person transported there as fast as possible after/during the application of first aid.

NECROPSY

Any chimpanzee that dies at the sanctuary should be necropsied at the earliest possible opportunity. A protocol for necropsy is given in the appendix

PEST CONTROL

Attention must be paid to limit the populations of vermin/pests within and around the chimpanzee areas. Particular attention should be paid to rodent control. If having a cat(s) on site is found to be the most effective method of rodent control it is important to ensure that it is not allowed access to enclosures, cages etc. Cats must also be prevented from defaecating on or near food intended for the chimpanzees.

WATER SUPPLY FOR CHIMPANZEES

Filtered water should be used for the chimpanzees especially infants if at all possible.

NUTRITION

The specific nutritional requirements of chimpanzees are still not completely understood. Most are based on human recommended daily allowances (RDA) and these should be consulted when formulating a diet. Diet in captivity has two main functions: to meet the nutritional requirements of the individual and to promote enrichment through provision of foraging.

Chimpanzees are primarily foli-frugivorous. A wide variety of foods however, are consumed in varying quantities depending upon availability, season and geographical location. Seeds, roots, flowers, leaves, pith, bark, soil, invertebrates, and vertebrates may also be consumed. At certain times significant amounts of meat may be consumed through group cooperated predation. Up to half of the waking hours are spent foraging for various foods. Foraging facilitates sharing and other cooperative activities providing important social benefits.

Such a diverse diet is difficult to replicate in captivity. All attempts should be made to provide as much variety as possible. We would recommend feeding at least 3-4 times a day to distribute foraging over a large portion of the day. Additional scattering of berries, nuts, or small morsels throughout the day into hay, leaves, bark will further promote foraging activities. Such foraging ensures distribution of food amongst all levels of individuals in a group with minimal domination. Feeding fruit whole often actually promote greater sharing and facilitates mitigation against food domination due to the time spent procuring the fleshy insides of firmly/hard-covered foods.

It would be suggested then that a wide variety of foods be provided including; fruit, vegetables, seeds, nuts and cereal based porridges. Examples of diets for weaned animals have been provided in the appendices. Provision of vitamin and mineral supplements may be given where deemed appropriate, however fresh produce normally has sufficient levels.

Nutritional problems are rare in captive chimpanzees due to their non-specific diets. Hypercholesterolaemia has been noted but its significance is questionable. Cholesterol levels can be reduced by feeding cereals and low fat content fruits. Anaemia may be seen in females with iron deficiency. Iron supplementation can be given as deemed appropriate.

Dry, scaly skin may be observed in low fat diets. Safflower oil, which is high in essential fatty acids and low in cholesterol, or palm nut oil or avocado may ameliorate this.

Summary:

- Food should be fed to promote foraging and enrichment.
- Provide a wide variety of novel foods.
- Always ensure by observation that each receives a nutritionally balanced diet with adequate intake.
- Re-evaluate the diets regularly, especially for growing animals and nutritionally balanced diet with adequate intake (pregnant/lactating individuals).

FOOD PREPARATION AREAS

All food should be stored off the ground with adequate provision for air circulation. All possible measures must be taken to exclude vermin from the food store. Areas used for the preparation of chimpanzees' food should be scrubbed daily with a disinfectant such as "Dettol", followed by thorough rinsing. Once a week the area should be treated with bleach and rinsed.

TRANSPORTATION

It is best to sedate chimps prior to transportation. However, young chimpanzees (less than 3 years) can be crated and transported without sedation. Crates should be strong with a solid bottom to contain urine and faeces. It should be lockable and bedding should be provided. Use of a cargo net as a secondary safety precaution is advisable. An experienced person (experienced vet if possible) should accompany the chimp during transportation. Emergency anaesthesia/medical kit should be carried as well as a water spray/ice cubes in case of hyperthermia. A suitable dose of an appropriate anaesthetic drug should be drawn up and ready for use.

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 5

Releases and Site Selection Guidelines

Releases and Site Selection Guidelines Working Group Report

Working Group Participants

Facilitator: Frands Carlsen ,Copenhagen Zoo

Aliette Jamart, HELP

Ateh Wilson, Limbe Wildlife Centre

Carla Litchfield, Adelaide University/Zoo

Debby Cox, Jane Goodall Institute/Ngamba Island Chimpanzee Sanctuary

Laurence Vial, HELP

Linda Rothen, Ngamba Island Chimpanzee Sanctuary

Peter Gray, David Greybeard Sanctuary

Wayne Boardman, UWEC

Problem Statements

Due to the rapid influx of orphan chimpanzees from increased logging, habitat destruction and commercial development of the bush-meat trade, and lack of awareness in chimpanzee range countries, sanctuaries have emerged on an ad-hoc basis resulting in crisis management. This has made it difficult for long-term planning and adequate collaboration between sanctuaries and chimpanzee experts. There is a very evident need for general guidelines for the establishment of chimpanzee sanctuaries, incorporating liaison with host governments, local communities and authorities, site location, long-term sustainability, management practices, chimpanzee management, and health issues.

Common Objectives and Long-term Development

Currently many sanctuaries are working in isolation. There is little communication and collaboration among sanctuaries to establish common objectives, standardization of chimpanzee management protocols, veterinary protocols, and increased political leverage. Long-term sustainability of sanctuaries is seldom given due consideration, particularly in view of the long life expectancy of chimpanzees.

Site Criteria

Location of a sanctuary is an important factor in its long-term sustainability, physical and bio-security. This has however, in the past, not always been given the due consideration it warrants. Possible consequences are:

- Conflict between captive and wild chimpanzee populations
- Disease transmission between human and captive chimpanzees
- Conflict between sanctuary and local communities
- Overcrowding within the sanctuary resulting in stress and habitat degradation
- Financial unsustainability from difficult access for eco-tourism
- Poor education potential

Goal

- A checklist on site criteria universal to African Chimpanzee Sanctuaries
Time Frame: 3 months

Recommendation

- Guidelines for site criteria pertaining to future release and no release options (see Annex 1).

Government/Local Authority Involvement

Different political climates throughout the chimpanzee range countries can lead to a lack of local commitment and support for the sanctuary as well as active discouragement. In other cases, governments in crisis are often unwilling to co-operate in the translocation of sanctuary chimpanzees. Chimps in distress often create an emotional reaction resulting in the ad-hoc establishment of a “sanctuary” without the advocated liaison with national government and/or local authorities and communities.

Goals

- Approval by and collaboration with host government, incorporating the local community, for the establishment or recognition of existing sanctuaries.
- Government enforcement of local and international wildlife laws.

Recommended Activity

- Individual sanctuaries to negotiate a Memorandum of Understanding with the host Government, incorporating the local community.
- Individual sanctuaries to lobby and collaborate with host Governments for their commitment to enforce local and international wildlife laws.
- Should a future umbrella organization for sanctuaries be established, one of its objectives would be to lobby and facilitate co-operation with local governments

CONTINGENCY PLANNING

Sanctuaries have as yet not reached the stage of development where contingency planning is automatically a part of a management plan. Given the frequent insecurity to be found in chimpanzee host and neighbouring countries, the nature of sanctuaries and the likelihood of disease epidemics, contingency plans for such events should be considered a necessity in the establishment of any sanctuary.

Goals

- An emergency task force (ETF), with an operating budget and capable of dealing with all emergency situations.

Time Frame: 12 months

- CITES willingness to issue blanket permits for emergency situations.

Time Frame: 12 months +

Recommended Activities

- Workshop elects an ETF establishing committee of 3 persons. The ETF, once established should address the following issues: funding, donation of supplies, expert database and detailed guidelines for all possible emergencies..
- Peter Gray will draft and circulate to stakeholders for endorsement, an appropriate proposal to CITES head office for such blanket permits as suggested. Long-term negotiations should be expected.

CODE OF ETHICS

There is currently no code of ethics for the physical or psychological well being of chimpanzees and staff and visitors, nor any guidelines for the type and suitability of research to take place in sanctuaries.

Goal

- A Shared Code of Ethics among sanctuaries.

Time Frame: 3 months

Recommended Activity

- Workshop to draft a Code of Ethics to include: finance, research, exploitation, husbandry and staff.
- Debby Cox (CSWCT) and John MacLachlan (JGI) will distribute draft Code of Ethics to stakeholders for comments and editing and final endorsement.

CARRYING CAPACITY

Often the nature of the initial establishment of sanctuaries derives from crisis situations and does not take into account the carrying capacity of the site/facilities. There is an urgent need to establish guidelines for the carrying capacity of sanctuaries to ensure the physical and social well-being of the chimpanzees as well as to improve the exchange of information between sanctuaries on this issue.

Goal

- List of carrying capacity of individual sanctuaries
- Database on past and current rate of confiscations

Time Frame: Completed

Recommended Activity

- Workshop creates a draft database for past and current rate of confiscations known to sanctuaries. Database to be updated monthly through email.
- Workshop to establish current and future carrying capacity for individual sanctuaries, based on average rate of confiscation. Follow-up to be carried out by John MacLachlan.

PREPARATION OF CHIMPANZEES FOR RELEASE INTO THE WILD

This issue has, in the past, caused controversy on the feasibility and the appropriateness of release of captive chimpanzees into the wild. Until today there has only been one known release project of sanctuary chimpanzees into the wild: HELP Congo project in the Republic of Congo. The increased likelihood of similar releases or re-introductions in future necessitates the development of appropriate guidelines.

Goal

Guidelines for the reintroduction/release of wild-caught chimpanzees.

Time Frame: 6 months

Recommended Activities

- Workshop to draft guidelines, considering the IUCN Reintroduction Specialist Group guidelines. Peter Jenkins will distribute release/re-introduction guidelines to stakeholders for comments and editing and final endorsement. Peter Jenkins and Laurence Vial will present endorsed guidelines to IUCN RSG (Marc Ancrenaz) for comments and acceptance.

AWARENESS AND EDUCATION

The focus on chimp welfare has dominated sanctuary activities. The value of sanctuaries and their captive population as a tool for awareness education of local communities and visitors is often forgotten. A strong commitment by the sanctuary family to implement an education programme is an urgent necessity.

Goal

- Mandatory conservation education programme for all sanctuaries.

Time Frame: 24 months

Recommended Activities

- Refer to policy statement from Working Group on policies.
- Collaboration among sanctuaries to assist each other in education programme development.
- Sanctuaries situated in areas of poaching activity should consider the opportunity to use the sanctuary as a tool for education of hunting communities (e.g. Limbe Wildlife Centre has achieved considerable success in a local out-reach education programme with a hunting village, Batoke).

MANAGEMENT AND ADMINISTRATION PRACTICES

The rapid rate of establishment of chimpanzee sanctuaries in response to the increased influx of orphan chimpanzees has led to the inadequate application of good management and administrative practices as well as a lack of financial resources.

Some of the key problems to be addressed are:

- capacity building of sanctuary personnel
- record-keeping and data collection and exchange of this information with other sanctuaries
- security of sanctuaries with respect to chimp escapes, theft, personnel and visitor safety, and sabotage
- recruitment, safety and appropriate use of volunteers
- liability insurance
- reporting and accountability, in-house financial management and planning
- unprofessional and non-cohesive approach to donors for sanctuary funding

Goals

- A standardized staff training programme for all sanctuaries.
- A standardized record keeping system for all sanctuaries (e.g., MedARKS, Arks, Sparks).
- An agreed minimum standard specification for sanctuary facilities appertaining to security
- A standardized volunteer policy
- Compulsory insurance and liability coverage.

Time Frame: 24 months

Recommended Activities

Workshop to elect a small group to work on a draft staff training programme over the next few months, possibly using material already in existence with some sanctuaries.

- Frands Carlsen, Copenhagen Zoo, to contact Nate Flesness, ISIS, to negotiate a solution on obtaining a software package as shareware between sanctuaries to assist in their record keeping systems. This will involve a donor organization and a central reporting sanctuary (e.g. CSWCT) that will subsequently distribute working copies of the software to other sanctuaries as a special agreement between the donor organization and ISIS. Installation and training would be carried out by an appropriate trainer (preferably based in Africa) to be identified, either centrally or regionally
- Workshop to revise the AZA Chimp Care Management Manual with particular regard to security, Debby Cox (CSWCT) and John MacLachlan (JGI) to edit and distribute draft to stakeholders for comments and endorsement, before final distribution of guidelines.
- CSWCT to distribute their volunteer policy to stakeholders for comments, editing and final endorsement. CSWCT to distribute final policy to stakeholders.
- Stakeholders should investigate local liability insurance policies, while PASA will investigate the possibility of large international insurance company offering a policy to all sanctuaries at a favourable rate.

All manuals and guidelines to be translated into French for French speaking African sanctuaries, courtesy of JGI Canada.

CHIMPANZEE MANAGEMENT

Chimpanzee management practices have been established for captive chimpanzees. Unfortunately, sanctuaries are often unable to take advantage of the professional available

expertise possibly due to under funding and in some cases the lack of information and communication technology.

Aspects of chimpanzee management practices generally unavailable are:

- standardized husbandry protocols
- permanent identification of chimpanzees
- minimum standards for housing facilities, perimeter boundaries
- a collaborative and standardized reproductive policy
- guidelines for re-socialization, integration and social structures
- a policy on euthanasia
- guidelines for high-quality diet and appropriate feeding protocols
- infant management protocols
- collaboration and information exchange between sanctuaries

Goals

To establish a chimpanzee management manual (English and French) to include the following issues:

- Husbandry
- Permanent ID procedures
- Facility design
- Reproduction guidelines (Working group on Behaviour-Reproduction)
- Behaviour (+ Ethogram for normal and aberrant behaviours) (Working group on Behaviour-Reproduction)
- Keeper - chimpanzee relationships
- Conditioning principles (operant and classical)
- Observation techniques
- Enrichment
- Reproductive control
- Hand-rearing
- Integration
- Safety
- Escape procedures
- Transportation
- Staff
- Design of facilities

Time Frame: 6 months

Recommended Activities

- Workshop to revise the AZA Chimp Care Management Manual. Debby Cox (CSWCT) and John MacLachlan (JGI) (Sarah Marshall and Monty/JGI for Behaviour & Reproduction) to edit and distribute draft (including relevant passages from ARAZPA/EAPA guidelines) to stakeholders for comments and editing and final endorsement, before final distribution of guidelines. (See Annex ? for initial husbandry manual modifications/additions).

All manuals and guidelines to be translated into French for French speaking African sanctuaries, courtesy of JGI Canada.

Time Frame: 12 months

HEALTH ISSUES

Many sanctuaries are established in relatively isolated areas with the result that wildlife veterinary and/or medical expertise is seldom easily accessible. The genetic similarity of chimpanzees and humans leads to the increased danger of zoonotic and anthroprozoontic diseases. High populations of sanctuary chimpanzees and the incoming of stressed and traumatized individuals can often result in disease outbreaks. Problems stem from the general unavailability of the following:

- access to specialized wildlife veterinary advice and/or medical advice
- preventative medicine programmes
- quarantine and hygiene protocols
- medical records and exchange of information between sanctuaries
- appropriate health manuals for sanctuaries
- strict regulations for human/chimp contact
- relations with appropriate high quality diagnostic laboratories
- standard necropsy procedures and diagnostic pathology.

Goals

- A vet/MD specialist directory that is accessible to all sanctuaries.
- Guidelines for a preventative medicine programme and a health care manual suitable for sanctuaries.
- A standardized euthanasia policy for health management reasons.
- A standardized medical record keeping system for all sanctuaries.
- A policy on intra and inter-specific contact with specific respect to zoonoses.

Time Frame: Completed

Recommended Activities

- A group consisting of Peter Gray, Debby Cox, Peter Jenkins and Laurence Vial are to establish a specialist vet/MD directory for Africa.
- Should a future umbrella organisation for sanctuaries be established, one of its objectives would be to secure funding to facilitate travel of specialists to sanctuaries requiring veterinary/medical assistance.

- Workshop revises the manual from Drill Ranch by Peter Jenkins and the AZA Chimp Care Management Manual. Josephine Afema and Wayne Boardman to edit and distribute draft (including relevant passages from ARAZPA/EAPA guidelines) to stakeholders for comments and endorsement, before final distribution of guidelines (see Annex 2)
- Workshop to prepare a draft policy statement on euthanasia. Josephine Afema and Wayne Boardman to distribute draft to stakeholders for comments and editing and final endorsement.
- Frands Carlsen, Copenhagen Zoo, to contact Nate Flesness, ISIS, to negotiate a solution on obtaining a software package as shareware between sanctuaries to assist in their record keeping systems. This will involve a donor organization and a central reporting sanctuary (e.g. CSWCT) that will subsequently distribute working copies of the software to other sanctuaries as a special agreement between the donor organization and ISIS. Installation and training would be carried out by an appropriate trainer (preferably based in Africa) to be identified, either centrally or regionally
- Workshop prepares a draft policy statement on contact between sanctuary chimpanzees, wild chimpanzees, other primates and other species, humans (staff and non-staff) with specific respect to zoonoses. Josephine Afema and Wayne Boardman will distribute draft to stakeholders for comments and editing and final endorsement.

All manuals and guidelines to be translated into French for French speaking African sanctuaries, courtesy of JGI Canada.

LOCATION AND DESIGN

Overview

Aesthetic designing sanctuaries for chimpanzees is a complex process, involving architectural, engineering, educational, fiscal, space availability, and husbandry considerations. Obviously the Manual cannot cover all of these considerations. This chapter will focus on those aspects of habitat design that most directly affect husbandry; health, psychological well being, cleaning, safety, escape prevention, animal introductions, observation, furniture, behavioural enrichment, and design features that promote the expression of species-typical behaviour and development.

As with other issues discussed in the Manual, facility design is inter-related with all other aspects of care. The behaviour, intelligence, and social complexity of chimpanzees presents a unique set of requirements for social complexity of chimpanzees presents a unique set of requirements for designing habitats that promote high quality care, and thus a high quality of life for their inhabitants. In many ways the design of a captive environment determines the activities of both humans and chimpanzees that can or will occur in that space. This chapter discusses the general features of sanctuaries and holding areas, and provides information about the way in which these features affect the quality of care of chimpanzees in designed environments. The discussion is necessarily rather general since no single formula for a sanctuary or holding area can, or should, be determined. The chapter focuses on the issues that most impact on quality care, and stresses the need to design captive environments with those issues in mind.

Chapter V is divided into sections dealing with the habitats of wild chimpanzees, information about current chimpanzee facilities from surveys, general considerations for design, sanctuary, outdoor free roaming area (OFRA), holding areas and specialized areas.

Wild

Information on the various habitats of wild chimpanzees is included in this chapter to give some idea of the basic features of wild chimpanzee habitats and to illustrate the variety of habitats in which chimpanzees are found.

Chimpanzees live in a variety of habitats associated with the tropical rain forest belt of equatorial Africa. Rain forest typically grows in lowland areas close to the equator that have an annual rainfall of at least 1,500mm and a dry season of no more than 4 months (Oates, 1986).

Previously Pan troglodytes was thought to exist solely in dense primary rainforest habitat but more recent field studies have demonstrated that the species uses a wide variety of habitats with equally diverse strategies for meeting nutritional and reproductive needs.

Habitats used by chimpanzees include primary tropical rainforest, secondary forest, swamp forest, montane forest, gallery forest, bamboo forest, mosaic habitats of grassland, woodland and forest, and even the arid habitat of the Ugalla area of northwestern Tanzania (Itani, 1979).

Population densities vary greatly in different types of habitat as well as within a single habitat type, and range from 0.1 to 6.8 chimpanzees per square kilometer. These variations are largely

associated with variations in habitat and the resultant availability and density of food items. However, even similar forest habitats can have widely varying densities; e.g., estimates for the Budongo Forest range from 1.45 chimpanzees per square kilometer (Albrecht, 1976) to 6.7 chimpanzees per square kilometer (Sugiyama, 1968). Different survey methods can account for some of the variability of population density reports and, therefore, any figures should be considered with a degree of caution.

Primary tropical rainforest is an undisturbed successional stage characterized by a closed canopy made up of three layers: A-layer is the highest layer and is composed of widely separated crowns of the tallest trees; B-layer is the intermediate layer and contains tree crowns, separated by 0.5 to 1 metre; C-layer is the lowest layer beginning at about 1/3 of the height of the tallest trees and is composed of relatively contiguous tree crowns. Primary forest usually has quite open undergrowth with relatively few lianas (Kortlandt, 1986). Leaf, fruit and flower growth and characteristics vary greatly among the plants in a rainforest, resulting in a patchy distribution of food for chimpanzees and other rainforest primates (Oates, 1986).

Secondary forest is a regrowth stage of the rainforest that has been logged or cleared for agriculture and is characterized by a rather flat canopy. The diversity of plant species found in secondary forest is lower than in primary forest (Skurpa, 1986), especially if only a few economically valuable tree species are planted after logging. Secondary forests often have thick undergrowth and large numbers of lianas (Kortlandt, 1986). The young lianas are important sources of fruit production.

The following three habitats, gallery forest, mosaic and swamp forest are very closely associated and in many cases blend one into the other. However, they do have distinctions that warrant separate descriptions.

Gallery forest is actually two types of forest, woodland and deciduous. Woodland is characterized by a lack of an interlocking canopy. Trees are sufficiently open to allow for grasses and other sun loving plants to grow beneath. Deciduous forest has canopies that are more or less in contact with each other and trees shed their leaves during the six-month dry season. Annual rainfall is between 500 and 1,500mm.

Swamp forests form a tiny but distinct lowland habitat. Plants in this habitat are adapted to constantly having their "feet" in water. This habitat is more frequent along the river banks and lake shores and it allows the plant life to depend on the water available from a more constant source rather than on rainfall. Swamp forests are generally considered to be a part or a strip of gallery forest (Camerapix, 1989)

Mosaic habitat is really a blend of habitats. Deciduous and woodland forest along with more open savannah, which is characterized by a predomination of grasses and a scattering of trees, are frequently contiguous. The different habitats grade one into the other making precise delineation difficult (Camerapix, 1989).

Montane forests are those forests between 1,200 metres and 3,000 metres. With cooler temperatures and lower evaporation rates, forests exist on rainfall as little as 635mm per year.

Plant diversity is great within this habitat with lower, wetter regions having higher diversity than higher, drier regions. Bamboo “forests” are a zone in Montane habitat existing even up to the tree line at 3,000 metres (Reynolds and Reynolds, 1965; Cameraprix, 1989).

The semi-desert habitat that is occupied by chimpanzees is characterized by open forest dominated by *Julbernardia globiflora*. These forests are exceptionally sparse to the point of almost non-existence in some regions. The arid habitat occupied by chimpanzees can be generally considered as extremely sparse riverine forest (Itani, 1979).

From the descriptions of the various habitats, it is clear the chimpanzees live in a variety of conditions from deep forest to more open, mixed forest-savannah regions. They inhabit lowland and relatively high altitude areas. Chimpanzees live in very wet to almost desert conditions. The fact that the species has colonized these very different habitats gives evidence for the specie’s extreme flexibility and adaptability.

SANCTUARY

Chimpanzee areas within a sanctuary have different types of facilities and, in many cases, use those facilities in different ways. The basic types of chimpanzee facilities are the outdoor enclosure and the holding area. Some institutions may have only one of these facilities, others may have both. The factors that determine the types of facilities that a sanctuary will have to maintain chimpanzees and the ways in which those facilities will be used, include whether this is going to be a temporary sanctuary, a sanctuary to be used in future for releasing chimpanzees back into the wild state, or whether this is going to be a permanent sanctuary.

For tourism/education purposes, viewing of chimpanzees should be done outside the enclosure and away from the holding facilities, with a good viewing of overall enclosure. In general, a 5 metre distance away from the chimpanzees is recommended to reduce disease transfer. If using elevated viewing platforms, it is recommended that these platforms be 1 metre away from the fence line to reduce incidents of objects or persons falling into the compound.

SITE CRITERIA FOR SANCTUARIES

Future Release Option	No Release Option
Carry out E.I.A. & use of GIS tool	Carry out E.I.A. & use of GIS tool
Natural wild chimpanzee habitat, thick forest with no poaching activities, evaluation of quality & quantity of wild food plants.	Natural wild chimpanzee habitat preferred
Protected area preferred or close by. Botanical survey (1-2yrs) to be carried out.	Protected area nearby preferred
Site away from industry	Site away from industry
Good water access	Good water access
Comprehensive botanical survey of quality and quantity of wild food plants available.	Politically stable country
In-situ country/historical range country	Site outside protected area: min. 5kms from human settlement
Sub-species specific	Site inside protected area: min. 1 km but 5km preferred if double fencing is provided.
In the case of release area already primate populated, it is necessary to evaluate the primate density of the area to estimate the number of chimpanzees that can be released.	Island site: no human settlement other than staff.
Human settlements a minimum of 30 kms distant.	Tourist accessibility optional
Consider surrounding human activities, ie.agriculture, industry, urban	Possibility of education out-reach programmes (NB. situation of sanctuary within poaching area offers prime opportunity for education out-reach programme)
Preferred limited human access – geography can assist, i.e. rivers, swamps, non-agric. land.	
Transfrontier option?	

HUSBANDRY MANUAL MODIFICATIONS/ADDITIONS

All sanctuary facilities should incorporate:

- outside enclosure
- indoor holding facility
- access to quarantine and nursery facilities
- permanent water access

The design considerations would differ depending on the overall aim of the sanctuary, i.e. release, temporary or permanent.

Type of Sanctuary:

Island - total water barrier

Mainland - one peninsular (part fencing, part water barrier)
open land (total fence barrier)

HABITAT PREFERENCE: 50 – 100% FOREST

- if under 50% there is a requirement to provide artificial climbing apparatus
- if area is small, management should consider holding capacity due to fast degradation of habitat and size/age/sex composition of community

Area size:

Dependent on number/age/sex composition of chimpanzee community, fencing, funding, acquisition rate.

Managers must consider that adults will require more spatial distance than infants or juveniles.

Barriers:

Recognised barriers are water and electric fencing.

Electrical fencing:

Power source - mains
battery
solar

Preferred voltage level: 6 to 9000 volts

Minimum height: 8 feet/240 cms Inverted overhang: 45 degree angle

- minimum distance between live and earth wires = 10 cms
addition barrier attached to fence necessary, i.e.. chicken mesh/chain link
- net/mesh larger spacing is workable
- maintenance and modification is required as part of operational/recurrent expenditure
- design for electric fencing to enter water is often required – changeable water level to be considered
- circuit breakers on portions of the fence are necessary to minimize loss of power to entire fence.

Water Barrier:

Gradual slopes rather than steep drop-offs preferred to avoid risk of drowning.

Holding Area:

The size of the holding facility will be an important limiting factor on the carrying capacity of the sanctuary.

- floor surface area should be easily cleaned: concrete with satin finish
- walls/ceilings generally made from weld mesh or steel bars (7-8cm spacing of steel bars recommended)
- ex-situ countries will require solid walls and ceiling due to colder climates.
- holding areas should be built on high ground of sanctuary site (to avoid flooding)
- all holding facilities must have protection from rain and sun
- holding facilities should be designed with multi-rooms, interconnected with chimpanzee access doors (horizontal and vertical doors)
- rooms can also be connected by raceways allowing circular motion to avoid dead ends to facilitate moving individuals, and provides important escape routes for subordinate individuals
- furniture - elevated platforms and hammocks should be provided
bedding should be provided (grass, hay, shredded paper)
- keeper lock-off corridors (double door systems) are required
- 2 locking devices on each keeper access door and padlocks should not be used as a bolting device
- all keeper access doors should open INWARDS
- small outside holding area for isolation of individuals is desirable

Managers are advised to seek expert advice on design from other sanctuaries or Western zoos.

Outside Enclosure:

- Size of group and number of acquisitions will determine size of enclosure needed.
- The destruction of natural habitat needs to be considered when designing the outside enclosure.
- Any outside enclosure that has insufficient forest, or unsuitable natural climbing structures, should consider providing artificial climbing apparatus.
- Outside enclosures must provide drinking water at all times.

Special Facilities :

Quarantine facility: isolated from main holding facilities or off site.

Nursery: on or off site but must consider provision of 24 hours care for infants

Vet facilities: access to an area that is secure for anaesthesia/operations, etc.

Working Group Participants

Facilitator: Laurence Vial, HELP

Peter Jenkins, Pandrillus

Aliette Jamart, HELP

Estelle Rallaband, Project Primate/In Defence of Animals

Recommendations for the release of chimpanzees back to the wild

Specifically for the release of chimpanzees, the practical issues can be loosely categorized under the headings of where? who? and how?

1) Where to release the chimpanzees?

It is imperative that a comprehensive survey on the potential release areas is conducted to discover the following:

Criteria	Consideration
Size, range and type of area	<ul style="list-style-type: none">• An area of natural habitat, sufficiently large enough to accommodate the released chimpanzees, and to allow them to express normal behavior and to avoid ecological competition with other species• Natural barriers can serve to contain the chimpanzees in areas where they could be more easily observed post-release and protected.
Food availability	Sufficient quantity and variety of fruits, plant and insect species for the chimpanzees to remain nutritionally self-sufficient throughout the all year
Existence of wild chimpanzees	If the justification of the release is to reinforce the wild population, then the wild population should be low in number to prevent competition for resources and conflicts over territory
Presence of other animals	It is necessary to consider the possibility of resource competition between the released chimpanzees and other species
Human activities	<ul style="list-style-type: none">• Released chimpanzees must be protected against poaching and destruction of their habitat (logging, crops on burnt forest)• Released chimpanzees should peacefully coexist with the local populations. It is important when selecting the release area that the proximity to human habitations is considered due to possible crop raiding by chimpanzees that are not afraid of people.
Legal protection of the site	For the long-term protection of the chimpanzees, it is important to chose and area officially protected and to work in collaboration with governmental bodies to enforce the national laws protecting wildlife. The release area should have long-term political and financial support.
Environmental assessment	It is necessary to consider the impact the chimpanzees may have on the environment in the short and long term.

2) Who? Issues about which chimpanzees to release:

- **Ability to survive in the wild**

When considering which chimpanzees to release, it is important to assess whether the selected individuals possess the necessary skills to survive in the wild, for example have they had experience of eating wild foods and can they build nests?

- **Origin of the chimpanzees**

The origin of the released chimpanzees should be considered, as it is important to only release individuals from the same sub-species into areas where they originated from. This is to avoid potential genetic “maladaptation”. The World Conservation Union recommends that released individuals should be closely related genetically to the original native stock. The most realistic policy to avoid loss of genetic variation is to release as many unrelated animals of both sexes as possible providing a high level of variation.

- **Health screening on chimpanzees to be released**

To avoid disease transmission from the released chimpanzees to either their wild con-specifics or other wildlife species it is imperative that the chimpanzees to be released are given a comprehensive health screening pre-release.

This is the summary of veterinary procedures taken from the “Veterinary and Re-introduction Specialist Group”.

Pre-release period	Release period
<ul style="list-style-type: none"> • Clinical examination (weight, measurements and dental formula) • 2 TB tests on the eyelid (1500 UI/0,1 ml) with at least two weeks between injections • Blood tests <ul style="list-style-type: none"> ⇒ hematological and blood chemistry analysis ⇒ serological screening (retroviruses, filoviruses, Hepatitis A and B, blood parasites) • Hair samples for genetic analysis and individual identification • Examination of stool samples for intestinal parasites (Ancylostoma, Strongyloides stercoralis, Balantidium coli) • Anti-parasite treatments if necessary (ivermectin or albendazole) • Vaccines : tetanus and poliomyelitis <p>Each month for 3 months pre-release: fecal analysis, blood screening, vaccinations boosted if necessary</p>	<ul style="list-style-type: none"> • General clinical examination • TB test on the eyelid with lecture 48 and 72 hours later • Re-vaccine for tetanus and poliomyelitis • Vitamins and antibiotics injected as preventive measure against vulnerability to infection related to stress. • Fecal samples to parasites analysis • Anti-parasite treatment (ivermectin and albendazole) • Blood samples to count the antibodies against Hepatitis A and B, retro-virus and filo-virus, to search for blood parasites and to make blood analysis

3) How? Issues surrounding the application of the release program:

- a. Feasibility study and background research:- see sections 1 and 2 on where and who – if the criteria have been met then you can:
- b. Plan and implement the release

- c. Post-release monitoring of the chimpanzees health status and their adaptation back to the wild.
- d. Long term data collection on the chimpanzees and their potential impact on the environment
- e. Schedule for the gradual reduction of human support

It is important that the release process is fully documented to allow modification of techniques employed and to facilitate the communication of information to others considering the implementation of a release. The long-term collection of scientific data can evaluate the viability of the release.

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 6

Communication and Database

Communication and Database Working Group Report

Working Group Participants

Facilitator: Norman Rosen, CBSG
Stephen Brend, International Primate Protection League
Kay Farmer, University of Stirling
Peter Hammelsbeck, Jane Goodall Institute-Germany
John MacLachlan, Kitwe Point
Neil Maddison, Bristol Zoo Gardens
Gerald Muyingo, Ngamba Island Chimpanzee Sanctuary
Sheri Speede, In Defence of Animals
Lucy van Beek, Tigress Productions
Michael Wamithi, IFAW
Christine Wolf, Fund for Animals

ISSUE: AVAILABILITY OF INFORMATION

Definition:

There is an immediate need for information on sanctuaries that is of use to different groups including sanctuary managers, donors and the media. The problem is compounded by the different groups needing different information, which must be simple to update, access, and not compromise confidentiality. Thus, a central point of collection and dissemination is called for. To encourage the sanctuary managers to keep up to date the records that cover the information less immediately necessary for them (for example, details of their facility), it must provide them with the information they require. This is likely to encompass appropriate record-keeping systems and a forum for rapid, discrete information sharing.

Recommendations:

There is a need for the immaculate keeping of records. The group feels sanctuaries should keep information in the following five subject areas; organisational details, animal information, range country data, range of activities and financial activities. Below we have listed the information we suggest sanctuaries keep within those subject headings. The sanctuaries can then decide how they distribute this information.

ORGANISATIONAL INFORMATION

Country	% Revenue raised – in country
Name and address of sanctuary	% Revenue raised – out of country
Organisational name and address	Staff organisation
Date established	Legal status
Size of sanctuary	Veterinary resources
Local staff	Partnerships
Expatriate staff	Publications available
Staff details	Overseas representation
Mission statement	Wish list
Land ownership	Areas of expertise
Government employees	Conservation policy
Local/urban location	
Annual budget	

ANIMAL INFORMATION

Number of chimps at sanctuary	Specific species
Absolute capacity at sanctuary for chimps	Holding facilities
No and size of social groups	Hand rearing protocols
Animal life history	Clinical records
Reproduction	Feeding regimes
Quarantine facility	Escape protocols
Confiscations/arrivals in last twelve months	Other species
Vet protocols	Acquisition rate
Clinical records	

RANGE COUNTRY INFORMATION

Suitable chimp habitat	Other primate sanctuaries
Wild populations	Habitat protection/anti-poaching
Relevant protection laws	Social, economic, political information
Estimated number of orphans/captives in country	

RANGE OF ACTIVITIES

Chimpanzee re-introduction scheme	Sanctuary run habitat protection/ Anti poaching operations
Local education	Tourism
Local development	Visitor policies

Guidance notes:

Organisational Information

Country: Which country/ies is your sanctuary operating in?

Name: What is the name of your sanctuary?

Is this the same name as your organisational name? If not, what is the official name of your organisation?

Date Established: When did your sanctuary start?

Size of Sanctuary: What is the size of your sanctuary in hectares/acres/km².

Local Staff: How many local people do you employ?

Expatriate Staff: How many people do you employ from overseas?

Staff Details: Do you take any volunteers from overseas organisations? If so, how many per annum?

Mission Statement: What is your mission statement?

Land Ownership: What land tenure does your sanctuary have over the land you occupy?

Government Employees: How many government workers are there?

Local/Urban Location: What is the specific location of your site (s)? For e.g. whether it is a reserve or protected area or other.

Annual Budget: What are the approximate running costs of your sanctuary?

% Revenue raised: How much revenue comes from in country?
How much from overseas?

Staff Organisation: What is your organisation structure??? Please provide an organisation diagram showing the structure of your sanctuary management

Legal Status: Under what formal agreement does the sanctuary operate? For instance, are you a registered NGO? Do you have a memorandum of understanding with the government or is there another legal mechanism that you operate under?

Veterinary Resources: What veterinary resources do you have? Who is responsible for your vet protocol? For instance, do you have a resident vet?

Partnerships: Please detail any organisations you are working with and describe your relationship with them.

Publications: Please supply details of any information that you have had published. This includes students reports, paper work, magazine and newspapers articles, published project reports and also sanctuary filming and audio tapes.

Overseas Representation: Please supply the name of a contact person or organisation of overseas representative and the contact details.

Wish List: What items are you looking for to support your sanctuary? All the sanctuaries should make a list of all the things they require (both immediate and long term) with estimated costs.

Areas of expertise: Please give details of any specialist knowledge you have within your sanctuary. There are often areas that sanctuaries either specialise in, or have had to acquire specialist information relating to sanctuaries. It can help in supporting chimpanzee conservation with utilising specialist knowledge between sanctuaries.

Conservation policy? What policy do you have to conserve animal populations?

Animal Information

No. of Chimps: How many chimpanzees are in your sanctuary?

Capacity: What is the total number of chimps that can be held at your sanctuary?

Acquisition rate: how many chimpanzees arrive at your sanctuary each month/each year?

No and Size of Social Groups: What is the number and size of social groups?

Chimp Life History: Can you supply life history records for each chimp at your sanctuary? Complete records should be maintained for every animal from the time of arrival and then onwards, including the date of arrival, where he/she came from, estimated age, condition on arrival and all other relevant information. These records must be maintained throughout the chimpanzees life and include medical information, details of any movement or transfer. It is imperative that these records are comprehensive and can be transferred should the animal move to another sanctuary.

Reproduction: Do you have breeding or non breeding policy? (Yes/No) If yes, please give details, if no how do you control breeding within your groups?

Quarantine Facility: Do you have quarantine facilities?

Confiscation/Arrival for the last 12 months: Do you maintain confiscation records? The information should include details of acquisition of all animals and provide the names of people involved and locations.

Vet Protocols: What are your testing policies, vaccination policies, de-worming policies, and euthanasia policies at your sanctuary?

Clinical Records: Do you keep clinical records? For each chimpanzee, in addition to name, age and gender information, there should be specific medical records. These should include testing/vaccination dates and results, dates of de-worming and records of any illnesses, treatments and results.

Specific Species: Do you know the taxonomy of each individual chimpanzee? Each animal life history records should include details of subspecies if known.

Holding Facilities: Do you have them or not?

Hand Rearing Protocols: Do you have a hand-rearing protocol? This should cover what actions you take when hand rearing an infant

Feeding Regime: What, how often, and how much do you feed the chimpanzees?

Escape Protocols: Do you have a procedure for dealing with chimpanzee escapes? This should cover written actions to be taken in the event of escape.

Other Species: What are the number and type of other species at your sanctuary? Please note it is worth keeping the information described above for all the other species under your care.

Range of Country Information

Recommendation

It is important for all sanctuaries to maintain an awareness of the environmental, social and political developments of the countries in which they are operating, as these will set the context in which they'll have to work. We suggest sanctuary managers know about the following range of issues.

Suitable chimpanzee habitat: How much habitat remains in the country, where is it and in what size areas? What is the rate of destruction?

Wild Population: What is happening to the wild population? e.g. estimated numbers of free-living chimpanzees, location, groups, size of habitat and threats to populations.

Relevant Protection Laws: It is important that sanctuary managers know the laws that they are helping to uphold.

Estimated Number of orphans/captives in the country: What is the scale of the problem facing the sanctuary? What are the estimated numbers of chimps held illegally?

Other primate Sanctuaries: What other sanctuaries are in the country? Are you aware of their activities? Are you in contact together and working together?

Habitat Protection/Anti poaching: What conservation efforts are undertaken in the country and how effective are they?

Social/Economic/Political Indicators: Management should keep in touch with how the country is developing and the effects these changes could have on their sanctuary. Additionally, a record of relevant Government departments, in-country contacts, with a directory of relevant officials can facilitate swift and effective communication.

Range of Activities

Chimpanzee re-introduction Programme: Do you have a stated re-introduction policy? Note: it is imperative that IUCN introduction guidelines should be strictly adhered to.

Local Education: Do you have an education programme for visitors to your sanctuary? A central role for all sanctuaries should be conservation education and all sanctuaries should endeavour to develop a local education programme

Local development: Are you involved in any work outside of the sanctuary to develop your local area?

Habitat Protection/Anti poaching: Does the sanctuary assist in habitat protection and/or anti-poaching activities and in what way?

Tourism: Does your sanctuary allow tourist? What are the pros and cons of tourism you have experience at your sanctuary.

Visitor policies: Do you have guidelines for visitors at your sanctuary? For example, no flash photography, feeding the animals etc

Financial Activities

The group discussed the range of financial activities undertaken by sanctuaries and recognised that it is essential that comprehensive financial records be kept. Fundraising is considered to be a separate issue. However, some or all of the following could be considered for inclusion.

- Chimpanzee Adoption Scheme
- Lack of information on fundraising resources
- Research donor base
- Commercial revenue generation
- Overseas representation
- Research zoo partnerships
- Endowment activities
- Streamline fundraising approach
- Co-ordinate fundraising and marketing

Note: these areas were discussed in greater detail when fundraising for sanctuaries was considered under the working group remit for the Pan-African Sanctuary Alliance (PASA). Please see relevant section for further details.

ISSUE: FUNDING

Sanctuaries face a lack of fundraising resources, be they a simple lack of relevant donors or the time and ability need to develop a fundraising proposal. There are a variety of organic/local fundraising schemes that will particularly emphasise commercial activities (for example tourism,

merchandising). An alternative source of funds emphasises altruistic giving. This money can come from a variety of sources, for example grant giving bodies, trusts and foundations, corporate business, multi-national institutions, bi-lateral institutions, and governments. Additionally, gifts in kind can be sourced from a number of organisations.

Access to altruistic sources, however, almost invariably requires overseas representation.

Recommendations:

Zoos, on face value, seem particularly appropriate to take on the role of overseas representation and prime funders. Recent (2000) changes in European legislation have insisted that EU zoos have to have an *in-situ* component to their work. Partnerships between individual zoos and sanctuaries should be investigated for potential benefits.

In order to address the ‘famine or feast’ scenario encountered by many sanctuaries, the prospect of endowment planning, and developing on-going fundraising activities – perhaps leading to the creation of a trust or foundation – should be examined. Obtaining gifts in kind is often an easier way for donors to give to sanctuaries than direct funding. This should be explored.

Note: Currently, the process of gaining financial support from the large, multi-national donor agencies is beaucroatic, time-consuming, tied to short-term projects and remains the province of only the larger NGOs. Without funding of considerable size (millions of ecu), the root causes of the sanctuaries problems such as deforestation, bushmeat, and forest-fire, cannot be tackled. The process of giving must be streamlined and co-ordinated either by having a fund created whose interest would be dispersed (the donor holds control of the principal) or smaller amounts are committed over a longer period. Access to emergency funds should be considered in the grant-giving process.

In short, there needs to be a co-ordinated fundraising and marketing strategy in order to address the increasing need for sanctuary resources.

Web Site Subcommittee

Subcommittee Participants:

John MacLachlan
Rosalind Alp
Carol Keys
Estelle Raballand
Richard Wrangham

I. Internal Communication: *e-mail List Server*

1. Locate Possible Servers:
 - University of Wisconsin
 - Jane Goodall Institute
 - Allo Primate
 - Alliance to do itself (with person to maintain)
2. Host to be determined
3. Training for sanctuary staff
 - Hardware
 - Software
 - Maintenance
4. Translation – French/English, +?
5. Access
6. Funding for Devices:
 - Cost assessment to be made by Carol and John
 - Donations

E-mail on Sites:		On-site	Town	Home
Chimfunshi	Zambia	?		
Baboon Island	Gambia			X
Tacugama	Sierre Leone	X		X
Limbe	Cameroon	X	X	
G Yaounde	Cameroon	X		
IDA	Cameroon			X (12 hrs)
Ngamba	Uganda	X		
Drill Rehab	Nigeria	X		
FRIENDS OF ANIMALS	Guinea	X		X (\$\$\$)
Sweetwaters	Kenya	X		
David Greybeard	South Africa	X		X
HELP CONGO	Congo			X
Chimpounga	Congo	X		(X)
CCC	Cameroon		X 14hrs	

Bold = not currently able to access e-mail. Need IT.

Use – once per week

Carol and John will set up lit server.

ACTION:

1. **Carol and John to set up list server**
2. **Carol and John to make needs assessment for sanctuaries without current e-mail access**
3. **Carol and John to determine costs, suggest funding avenues**

II. BUILDING AN EXTERNAL WEBSITE FOR THE SANCTUARY ALLIANCE

- Find Host:
 - Jo Fritz, Arizona?
 - Andrews/Keys Associates?
 - Other?
- Home page should clearly state the crisis, solution(s), actions
- Site should be designed for universal use – across all cultures
- Site should contain information on each sanctuary (minimal info on location, number of chimps, etc TBD)
- Site should contain hyperlinks to other appropriate sites

ACTION:

1. **Carol/John to receive data, photos from sanctuaries**
2. **John Maclachlan, Carol Keys and Philip Andrews to build home page, suggest architectural hierarchy, design site, create Alliance identity**
3. **Sanctuaries – send photo, basic info to Carol**

MEDIA SUGGESTIONS

Sanctuaries should make an effort to build trusting relationships with production companies and with individual filmmakers, reporters and journalists to promote the work that they do within the sanctuary.

To save time and to make sure that sensitive issues are addressed sanctuaries could take into consideration the following suggestions. These should be discussed at the outset with any production company wishing to film the sanctuary:

Facility Fees: The type of production and the number of days they are staying at the sanctuary should be considered. e.g. education programmes do not have big budgets, whereas production companies making adverts can afford more.

Credits: A credit should be requested at the end of the programme for both the sanctuary and possibly important sanctuary associates. e.g. for Ngamba. This would include UWAF, Ngamba Island Sanctuary etc.

Fundraising Contacts: Request that contact information on how to help the sanctuary is made available at the end of the programme or on their website. This could include the address, phone number and website of the sanctuary and associated organisations.

Sensitive Issues:

- portraying chimpanzees as “pets”
- exclusion of local people
- exclusion of the root causes (bushmeat, logging)

Rushes: It is possible to request VHS copies of rushes for educational purposes (this will not always be legally possible)

Scientific Advisors: Suggest suitable scientific advisors for programs

Sanctuary’s own film footage:

If a production company wishes to use a sanctuary’s own footage the sanctuary should think about drawing up a “Film Footage License Agreement”. This could state a fee for using this footage for a minute or part thereof in their programme. The fee should depend on how the footage will be used.

E.g. worldwide, all media, in perpetuity rights - \$100 per minute or part thereof.

UK, television rights, for 10 years – \$20

These agreements should be negotiable depending on the production and the amount of footage they would like to use.

Sanctuary’s own stills footage: See above

E.g. worldwide, all media, in perpetuity rights - \$50

These considerations could be included in “Location Release Forms”, “Film footage License Agreement Forms” and “Stills Footage License Agreement Forms” to form a contract with the production company.

Filming pack:

If a sanctuary has a lot of media attention it maybe useful to draw up a Logistical Filming Pack. This could include details on the following:

Information on the work of the sanctuary and any education package you have available.

Contact details at the sanctuary

Contact details of overseas representatives.

Contact details of local fixers who have worked with film crews before and can provide visas, invitations to work in the country, transport, translators, hotel accommodation etc.

Distance of sanctuary from nearest town, airport etc.

Rainy Season or best times to film.

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 7

Pan-African Sanctuary Alliance (PASA)

Pan-African Chimpanzee Sanctuary Alliance (PASA)

May 3, 2000

Entebbe, Uganda

Aim:

Provide a network to promote chimpanzee care and conservation in range countries via communication, lobbying and fundraising.

Stakeholders:

Sanctuaries, donors to sanctuaries (who are invited to join the Alliance) and lobbyists (who are invited to join the Alliance).

Lobbying/Briefing:

1. African Governments – Through other Governments
 - a. Bushmeat
 - b. Deforestation
2. Contact Allies
3. Communicate situation of chimpanzees to:
 - African Governments
 - Media
 - Western Governments
 - Individual Politicians
 - Annual “State of the Apes” Report
 - European Logging Companies
 - European Commission/Parliaments
 - African Public
4. Target Industry:
 - Industry boycott of companies and/or products associated with chimpanzee habitat destruction

EARLY SEPTEMBER

- NB-China Connection
- African Governments
- PELE Amendment

Lobbying Subgroup

Subcommittee Participants:

Tammie Bettinger
Carla Litchfield
Chris Mitchell
Debby Cox
Ateh Wilson
Annie Olivecrona
Peter Hammelsbeck

WHAT:

1. Elimination of African Great Ape Bush Meat Trade
2. Protection of Habitat
3. Ending the destruction of all African Great Ape Habitat
4. Reforestation/Restoration of Recent and Historical Habitat
5. For Financial and Political Support of Sanctuaries

WHO:

1. African Range Countries
2. OAU – Organization African Unity
3. Logging Companies
4. UN/EU/World Bank
5. Poachers
6. Embassies
 - a) In-range Countries
 - b) Range Embassies in Other Countries
7. Development of NGO's: CARE, CRS, US AID, GTZ, Population
8. Environmental/Conservation NGO's, Rainforest NGO's, WWF, AWF, FFI, Robin des Bois
9. A2A & EA2A & ARZPA, W2O, 200 Federations and Keeper Associations
10. Key Persons, Influential Individuals
 - a) Statesmen: AL Gore, Nelson Mandella, Gorbotschow, Koffi Annan, John Fru Ndi
 - b) Celebrities: Michael Jackson, Robert Redford, Sting, Bridgette Bardot, Bill Gates
11. Western Governments
12. Media
13. Industry: Sugarcane, tobacco, mining, manufacturers using rainforest products, oil
14. Retailers: Jewelry, Lumber
15. Tourist Industry, Travel Companies – Airlines, Visa Offices
16. Consumers
17. Pet Owners

HOW:

1. Information Technology
 - a) List Server
 - b) Web site w/links
2. Professional Lobbyist
3. Partner with Other Lobbyists
4. Coherent Unified Message with the Alliance
5. Slogan & Logo
6. Media: Print, TV, etc (Press Package)
7. Systems: Enlist help from churches, scientists, museums, traditional cultures, wildlife clubs, traditional traders, tourist organizations
8. Promote Sanctuary Work - -emphasize “frontline battle”
9. Get a Documentary on all “African Sanctuaries”
10. Education in Range Countries and Western Countries, Local Communities, Schools, Government Groups, International Community
11. Satellite Images Showing Pictures of Destruction
12. Get Key People to Visit Actual Areas of Deforestation, Bushmeat Markets
13. Traveling Rolling Exhibitions
14. Postal Offices – Stamps portraying sanctuaries, chimps, forest
15. Advertising Agencies, Cinema
16. Traveling Video Show to Range Countries, Local Communities
17. Letterhead Containing all the Sanctuaries and Partners logos
18. Posters
19. Merchandising: t-shirts, calendars, postcards, stickers, etc.
20. Multilingual printed material (English, French, Local Languages)
21. Develop a Character Identifying the Group (i.e., Stuffed Animal Toy)
22. Solicit Corporate Sponsor that will put logo/photo on label
23. World Heritage/Compensation Packages (i.e., Carbon-sink Compensation Program)
24. Entertainment Industry

Fundraising for Sanctuaries:

Aim:

1. Get a major agency to set up a fund to support sanctuary work
2. Trust Fund/Endowment
 - X-million \$
3. Support for the Alliance
4. Demonstrate support for individual applications
5. Zoos adopt a sanctuary

Fundraising Subcommittee

Sanctuaries need individual funding and the Alliance needs funding.

Ten Approaches:

1. Adoption Scheme: Provide a model that works
2. Tourism: Provide examples that work
3. Paying Volunteers: Provide examples which will work
4. Merchandising: Provide examples of products sold with successes
5. Identify and Form Partners: Build database of potential partners, e.g.,
 - PASA Registration with IUCN (for credibility)
 - Airlines (e.g., BA Assisting Nature Conservation)
 - Sanctuaries – Fundraising Directories: Help ensure each PASA sanctuary has overseas representation in Europe and America
6. Events – Not recommended
7. Media - Provide Guidelines for PASA Sanctuaries to ensure everyone benefits from filming and media opportunities
8. Zoo Partnerships:
 - PASA approaches AZA/GAZA on members' behalf
 - Next AZA/GAZA meeting, PASA representative to champion PASAs work, to facilitate 1:1 relationship; sell the “Partnership” concept
 - Qualify potential partners to avoid duplication
 - Maintain potential 200 partner database
 - Provide PASA members with potential 200partners
9. Endowment Fund: To raise sufficient funds (\$10Million) to build an endowment fund the revenue from which will be distributed among PASA members
 - Expensive to set up
 - Recruit endowment expert to lead the process
10. Approach Multinational and Bi-National Funding Agencies to Tackle Root Causes
 - Identify agencies that can donate \$1million in one donation
 - Make a proposal for funding, i.e., what is the money for? (e.g., publicity, awareness campaign)

NEXT STEP: FUNDRAISE FOR COMMUNICATION/LOBBYING

- Member donations?

- Partner support?

Communication Among Sanctuaries:

Primate sanctuary newsletter (end June)
CBSG – Policies, Standards

WEB SITE:

Internal Communication:

- Newsletter
- FAQs (internal)
- Sanctuary Database
- Private Chat Room (ICQ)
- CBSG Final Report
- Crisis Page

External Communication:

- Scientific Data
- Info about industries involved
- Chimp case history
- Discovery remote DVL web cams
- Crisis page
- Multilingual
- Hyperlinks
- Automatic e-mail updates to indicate copy changes

Networking:

- Mutual support for in-country activity

Objectives:

- Relationship with Other Organizations:
- Secretariat:
- Tools for Communication:
- Structure:

Pan-African Chimpanzee Sanctuary Alliance

May 5, 2000
Entebbe, Uganda

Facilitated by Richard Wrangham

It was agreed that the following decisions needed to be made quickly and while the group was still in session, and that all decisions, suggestions, structure, subcommittees and recommendations would be temporary, and would be reevaluated as needed.

1. Name of the Organization: PAN AFRICAN SANCTUARY ALLIANCE (PASA)

2. Stakeholders:

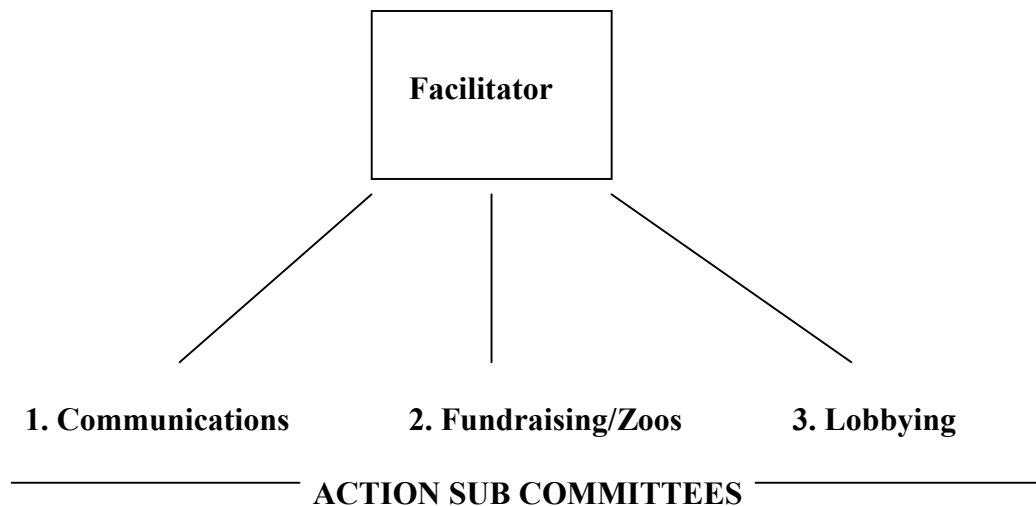
Sanctuaries, donors to sanctuaries (who are invited to join the Alliance) and lobbyists (who are invited to join the Alliance)

It was agreed that the term “Donors” would be changed to “Complementary Organization”, as some sanctuaries are also donors, and some potential donors do not share common goals with the Alliance (i.e., logging companies.)

3. Aims/Objectives:

Provide a network to promote chimpanzee care and conservation in range countries via communication, lobbying and fundraising.

4. Structure/Action



The following names were put forth as candidates for Facilitator:

- Gil Basuta
- Norm Rosen
- Michael Wamithi
- Bill McGrew
- Victor Balinga
- Paula Kahumbu

It was agreed by the group (and the candidates) that Norm Rosen and Michael Wamithi would be interim co-facilitators (for a period not to exceed one year) until the position could be filled.

It was agreed that the action sub-committees would include the following:

Communications:

Carol Keys
John MacLachlan

Fundraising:

Debby Cox
Carla Litchfield
Chris Mitchell (Chair)
AnnieOlivecrona
Tammie Bettinger
Frands Carlsen

Lobbying:

HELP Director
Becky Harris-Jones (Chair)
Rosalind Alp
Michael Wamithi
Sam Ubi
Ateh Wilson

Agreed 5/5/2000 by:

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 8

Local and International Education Guidelines

DEVELOPMENT OF LOCAL EDUCATION PROGRAMS

It is only through the education of the future generations that we will ensure the long-term survival of chimpanzees in the wild, the continuation of care for confiscated / orphaned chimpanzees in sanctuaries and address the issues of exploitation of both chimpanzees and their habitats.

Sanctuaries should endeavor to reach as wide an audience as possible through a variety of educational projects and the provision of a range of materials, wherever possible. The guidelines below have been formulated as a checklist for sanctuaries contemplating an educational program within the local schools and community.

Other educational materials may be considered for a range of other target groups (see Conservation Policy section) including policy makers, law enforcement officers, hunters/poachers, tourists, expatriates, Governments and NGO's. Any materials produced for these bodies will have to be individually tailored to suit their needs.

PRODUCING EDUCATIONAL MATERIALS

Before producing any educational materials for your sanctuary, you should consider the following points:

- What do you wish to achieve through the education program and who is the audience? Are you planning to educate just local community populations or provide a more international program?
- Is there an assigned education officer available within the sanctuary or will it be a part of one of the keepers' additional responsibilities?
- What is the realistic budget for producing educational materials? Is there the possibility of a local sponsor or fund-raiser?
- Are there educational materials produced by conservation and welfare organizations or zoos, which you could use within your education program? (See contact sheet at the end of this section)
- Which age groups do you want to prioritise? Junior, secondary, college, mixed ages in the local community?
- Research the needs of the local schools, colleges and community.
- Seek advice from local teachers on:
 - Relevant areas of study within schools
 - Advice on the need of multi-lingual materials
 - Appropriate pitch of language and abilities of the age groups concerned. Should the materials be pictorially led or text led?
- Consider the possibility of forming an advisory body with teachers and other bodies involved in local education if possible. This group could provide vital information to avoid producing inappropriate material.
- Consider the role of the media in your education program and use of the Internet as part of your international and local program.

DECIDING ON THE CONTENT OF YOUR EDUCATION PROGRAM

The content on your education pack will vary according to budget and resources available.

The following ideas have been devised to offer a range of ideas to suit a variety of budgets.

- **Tours:** Tours of the sanctuary by a trained member of staff. These are relatively cheap to do and provide a vital educational resource.
- **Display materials:** Production of display materials. These may be created for displaying in a kiosk at the sanctuary, a local community centre or as a portable display to be taken round for presentations and workshops. These displays may be very simply made from materials available or can form part of a more formal display.
- **Chimpanzee box:** The development of a chimpanzee box which contains a range of educational tools to be used within the classroom by the teacher. This may be loaned to local schools (or given) and include simple chimpanzee puppets, artificial foods, a long termite fishing stick, a story book about chimpanzees, possibly a snare and simple project ideas and biological, welfare and conservation information.
- **Education packs:** Simple or more complex education packs may be created to provide information on just chimpanzee issues or provide a more holistic environmental approach. There are plenty of conservation bodies and zoos which produce a wide range of Educational materials and may be used by the sanctuaries to suit their needs – rather than developing a new educational package. (see end of sheet)
- **Education leaflets and posters:** Leaflets and posters can offer a cheaper and more informal method of education and may form part of a series of leaflets on a range of issues or be used to advertise visits to the sanctuary, workshops offered, school membership schemes and other educational activities.
- **Workshops:** Interesting and innovative workshops may be developed relatively cheaply, with the advice of local teachers and the community. These should be developed to encourage participants to think about issues, discuss ideas and work towards developing solutions to problems. Role-play of situations can greatly help to stimulate discussion and break the ice. Stories for younger children can serve to introduce environmental issues and ideas.
- **Organized open days:** Within the sanctuary, you may consider organizing an Open Day when schools attend the sanctuary to learn about the need for sanctuaries and your particular goals. This may also be used as a media event which can then be used to educate a wider audience of readers.
- **Nature clubs:** The creation of Nature Clubs within schools may be considered to encourage wildlife and environmental awareness and pride.
- **Nature trails:** The development of a nature trail within the sanctuary or school grounds may be used to demonstrate wildlife issues and provide activities for Nature Clubs or school groups.
- **Wildlife library:** The provision of a wildlife library within the sanctuary may be used as a local resource for schools and the community. Publishers and organizations should be approached for donations of new or second hand books.

- **Wildlife bus:** If funds are available, the sanctuary may consider the provision of a Wildlife Bus which could tour schools providing workshops or be used to fetch schools to visit the sanctuary.
- **Membership:** School or group membership may be developed in order to raise awareness. Newsletters and project reports may be used as a continuous method of communication with member groups. Membership fees will obviously be a big consideration when developing these schemes. It may be that the international visitor Memberships may be used to sponsor the costs of the local school and community memberships.
- **Competitions:** Competitions may be used to encourage children to think creatively and provide a more informal way of learning. (examples might be a drawing contest or a name the chimpanzee event)

Once you have decided what you wish to achieve and begin thinking about producing the materials, consider:

- Are your materials being produced for the students, teachers, or community? Are there ways in which they can be produced to suit all?
- How are the materials to be produced? Are the leaflets, posters or packs to be produced in one-colour, two-colour or full colour? Are they to be photocopied on site or printed professionally (this will obviously be budget dependent)?
- Will you be demonstrating how your materials may be used by the teachers within the classroom or community?
- The use of illustrations / cartoons can help younger children to understand more difficult issues.
- Linking everyday experiences mentioned within the leaflet, poster or pack to their everyday life often helps people to understand more difficult or sensitive issues.

INTERNATIONAL EDUCATION PROGRAMME

National and international education may vary according to amount of funding and resources available. It may be possible to find outside organizations to help with the development of some of the ideas mentioned below:

- **Links program:** The development of a link program between schools surrounding the sanctuary and the international schools may be established to provide an exchange of wildlife and cultural information.
- **Membership Program:** International education may occur through the development of a membership program and provide schools with project sheets and newsletters.
- **The Internet:** If the sanctuary has access to the Internet web, it may be possible to develop a website which provides educational materials for international schools to use within their curriculum.
- **Teacher exchange programs:** It may be possible to implement teacher exchange programs to train staff members or teachers about environmental education issues.

CONTACT SHEET

- American Zoological Association (AZA) website: www.aza.org

- Born Free Foundation: website: www.bornfree.org.uk
- Bushmeat crisis: Website: www.biosynergy.org
- Chimp Haven: website: www.chimphaven.org
- International Fund for Animal Welfare: website: www.ifaw.org
- International Primate Protection League: website: www.ippl.org
- Jane Goodall Institute: website: www.janegoodall.org
- Living Africa: website: nttp.hyperion.advanced.org

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 9

CBSG Workshop Processes and IUCN Policy Guidelines

**Workshop Proposal
CBSG Processes
Reintroduction Guidelines
Confiscation Guidelines**

Workshop Proposal: Management of Chimpanzee (Great Ape) Sanctuaries Across Central Africa

The current distribution of the chimpanzee (*Pan troglodytes*) covers approximately 21 countries throughout equatorial Africa. Field reports from across the continent indicates that the species is under heavy siege due to rapid expansion of local human populations and the resultant increases in hunting, logging and the expansion of the commercial animal trade. One of the major outgrowths of this crisis has been the steady growth of chimpanzee sanctuaries throughout central Africa. From a more humanistic perspective, the growth in the number and size of these sanctuaries has had many positive impacts on unnecessary chimp mortality. However, this same rapid proliferation of sanctuaries and their equally rapid population growth has led to some considerable confusion about the management goals of chimp sanctuaries at both the local and regional levels, the development of consistent management standards from one facility to the next, the absence of strict veterinary protocols and training across institutions, and about the nature and structure of fundraising efforts necessary for continued survival of each sanctuary. In addition, the sanctuaries have had difficulties in communicating with and coordinating their management activities with other great ape conservation projects ongoing within Africa.

Discussions held during the June 1998 Great Ape Conservation Workshop in Orlando, Florida, as well as written material awaiting publication (i.e., Teleki, in prep.), suggest the following high-priority issues with regards to chimpanzee sanctuaries in Africa:

- What is to be the primary function of a chimpanzee sanctuary?
- What role, if any, can sanctuaries play in the conservation of endangered African primates?
- What types of management policies are optimal for effective sanctuary operation?

In response to the need to address these important issues, and after initial contact was made by representatives from the Jane Goodall Institute, the Conservation Breeding Specialist Group (CBSG), in collaboration with the Primate Specialist Group, was invited by the Director of the Uganda Wildlife Authority to conduct a regional planning workshop for chimpanzee sanctuaries across central Africa. The workshop is scheduled to be held 1-5 May 2000 in Entebbe, Uganda. Representatives from each of the sanctuaries housing chimpanzees across the continent will be invited and encouraged to attend so that a broad perspective is realized. Using the deliberative methodologies employed in PHVA and CAMP workshops (described in more detail elsewhere in this document), CBSG will engage participants in an intensive process designed to: 1) compile detailed records of chimps held within each institution; 2) review current and discuss possible future chimp management protocols, including detailed veterinary procedures; 3) promote more effective lines of communication within the sanctuary community and to the outside conservation world; and 4) assess current and proposed programs of public education and financial support.

A total of **\$28,800** is requested to complete this important project. Additional information concerning the proposed budget and the capabilities of CBSG relevant to this project are detailed in the following pages.

CBSG Workshop and Training Processes

Information on Capabilities of the Conservation Breeding Specialist Group (CBSG/SSC/IUCN)

Introduction

There is a lack of generally accepted tools to evaluate and integrate the interaction of biological, physical, and social factors on the population dynamics of threatened species and populations. There is an urgent need for tools and processes to characterize the risk of species and habitat extinction, on the possible impacts of future events, on the effects of management interventions, and on how to develop and sustain learning-based cross-institutional management programs.

The Conservation Breeding Specialist Group (CBSG) of IUCN's Species Survival Commission (SSC) has 10 years of experience in developing, testing and applying a series of scientifically based tools and processes to assist risk characterization and species management decision-making. These tools, based on small population and conservation biology (biological and physical factors), human demography, and the dynamics of social learning are used in intensive, problem-solving workshops to produce realistic and achievable recommendations for both *in situ* and *ex situ* population management.

Our Workshop processes provide an objective environment, expert knowledge, and a neutral facilitation process that supports sharing of available information across institutions and stakeholder groups, reaching agreement on the issues and available information, and then making useful and practical management recommendations for the taxon and habitat system under consideration. The process has been remarkably successful in unearthing and integrating previously unpublished information for the decision making process. Their proven heuristic value and constant refinement and expansion have made CBSG workshop processes one of the most imaginative and productive organizing forces for species conservation today (Conway 1995).

Integration of Science, Management, and Stakeholders

The CBSG PHVA Workshop process is based upon biological and sociological science. Effective conservation action is best built upon a synthesis of available biological information, but is dependent on actions of humans living within the range of the threatened species as well as established national and international interests. There are characteristic patterns of human behavior that are cross-disciplinary and cross-cultural which affect the processes of communication, problem-solving, and collaboration: 1) in the acquisition, sharing, and analysis of information; 2) in the perception and characterization of risk; 3) in the development of trust among individuals; and 4) in 'territoriality' (personal, institutional, local, national). Each of these has strong emotional components that shape our interactions. Recognition of these patterns has been essential in the development of processes to assist people in working groups to reach agreement on needed conservation actions, collaboration needed, and to establish new working relationships.

Frequently, local management agencies, external consultants, and local experts have identified management actions. However, an isolated narrow professional approach which focuses primarily on the perceived biological problems seems to have little effect on the needed political and social changes (social learning) for collaboration, effective management and conservation of habitat fragments or protected areas and their species components. CBSG workshops are organized to bring together the full range of groups with a strong interest in

conserving and managing the species in its habitat or the consequences of such management. One goal in all workshops is to reach a common understanding of the state of scientific knowledge available and its possible application to the decision-making process and to needed management actions. We have found that the decision-making driven workshop process with risk characterization tools, stochastic simulation modeling, scenario testing, and deliberation among stakeholders is a powerful tool for extracting, assembling, and exploring information. This process encourages developing a shared understanding across wide boundaries of training and expertise. These tools also support building of working agreements and instilling local ownership of the problems, the decisions required, and their management during the workshop process. As participants appreciate the complexity of the problems as a group, they take more ownership of the process as well as the ultimate recommendations made to achieve workable solutions. This is essential if the management recommendations generated by the workshops are to succeed.

Participants have learned a host of lessons in more than 100 CBSG Workshop experiences in nearly 40 countries. Traditional approaches to endangered species problems have tended to emphasize our lack of information and the need for additional research. This has been coupled with a hesitancy to make explicit risk assessments of species status and a reluctance to make immediate or non-traditional management recommendations. The result has been long delays in preparing action plans, loss of momentum, dependency on crisis-driven actions or broad recommendations that do not provide useful guidance to the managers.

CBSG's interactive and participatory workshop approach produces positive effects on management decision-making and in generating political and social support for conservation actions by local people. Modeling is an important tool as part of the process and provides a continuing test of assumptions, data consistency, and of scenarios. CBSG participants recognize that the present science is imperfect and that management policies and actions need to be designed as part of a biological and social learning process. The Workshop process essentially provides a means for designing management decisions and programs on the basis of sound science while allowing new information and unexpected events to be used for learning and to adjust management practices.

Workshop Processes and Multiple Stakeholders

Experience: The Chairman and three Program Officers of CBSG have conducted and facilitated more than 100 species and ecosystem Workshops in 40 countries including the USA during the past 6 years. *Reports from these workshops are available from the CBSG Office.* We have worked on a continuing basis with agencies on specific taxa (e.g., Florida panther, Sumatran tiger) and have assisted in the development of national conservation strategies for other taxa (e.g., Sumatran elephant, Sumatran tiger, Indonesia). Our *Population Biology Program Officer (Dr. P. Miller)* received his doctoral training with Dr. P. Hedrick and has experience with the genetic and demographic aspects of a range of vertebrate species. He has worked extensively with *VORTEX* and other population simulation models.

Facilitator's Training and Manual: A manual has been prepared to assist CBSG Workshop conveners, collaborators, and facilitators in the process of organizing, conducting, and completing a CBSG workshop. It was developed with the assistance of two management science professionals and 30 people from 11 countries with experience in CBSG Workshops. These

facilitator's training workshops have proven very popular with 2 per year planned through 2000 in several countries including the USA. *Copies of the Facilitator's Manual are available from the CBSG Office.*

Scientific Studies of Workshop Process: The effectiveness of these workshops as tools for eliciting information, assisting the development of sustained networking among stakeholders, impact on attitudes of participants, and in achieving consensus on needed management actions and research has been extensively debated. We initiated a scientific study of the process and its long-term aftermath four years ago in collaboration with an independent team of researchers (Vredenburg et al. 1999). A survey questionnaire is administered at the beginning and end of each workshop. They have also conducted extensive interviews with participants in workshops held in five countries. *Three manuscripts on CBSG Workshop processes and their effects are available from the team and the CBSG office.* The study also is undertaking follow up at one and two years after each workshop to assess longer-term effects. To the best of our knowledge there is no comparable systematic scientific study of conservation and management processes. *We will apply the same scientific study tools to the workshops in this program and provide an analysis of the results after the workshop.*

CBSG Workshop Toolkit

Our basic set of tools for workshops include: small group dynamic skills; explicit use in small groups of problem restatement; divergent thinking sessions; identification of the history and chronology of the problem; causal flow diagramming (elementary systems analysis); matrix methods for qualitative data and expert judgements; paired and weighted ranking for making comparisons between sites, criteria, and options; utility analysis; stochastic simulation modeling for single populations and metapopulations; and deterministic and stochastic modeling of local human populations. Several computer packages are used to assist collection and analysis of information with these tools. We provide training in several of these tools in each workshop as well as intensive special training workshops for people wishing to organize their own workshops.

Stochastic Simulation Modeling

Integration of Biological, Physical and Social Factors: The Workshop process, as developed by CBSG, generates population and habitat viability assessments based upon in-depth analysis of information on the life history, population dynamics, ecology, and history of the populations. Information on demography, genetics, and environmental factors pertinent to assessing population status and risk of extinction under current management scenarios and perceived threats are assembled in preparation for and during the workshops. Modeling and simulations provide a neutral externalization focus for assembly of information, identifying assumptions, projecting possible outcomes (risks), and examining for internal consistency. Timely reports from the workshop are necessary to have impact on stakeholders and decision makers. Draft reports are distributed within 3-4 weeks of the workshop and final reports within about 3 months.

Human Dimension: We have collaborated with human demographers in 5 CBSG workshops on endangered species and habitats. They have utilized computer models

incorporating human population characteristics and events at the local level in order to provide projections of the likely course of population growth and the utilization of local resources. This information was then incorporated into projections of the likely viability of the habitat of the threatened species and used as part of the population projections and risk assessments. We are preparing a series of papers on the human dimension of population and habitat viability assessment. It is our intention to further develop these tools and to utilize them as part of the scenario assessment process.

Risk Assessment and Scenario Evaluation: A stochastic population simulation model is a kind of model that attempts to incorporate the uncertainty, randomness or unpredictability of life history and environmental events into the modeling process. Events whose occurrence is uncertain, unpredictable, and random are called stochastic. Most events in an animal's life have some level of uncertainty. Similarly, environmental factors, and their effect on the population process, are stochastic - they are not completely random, but their effects are predictable within certain limits. Simulation solutions are usually needed for complex models including several stochastic parameters.

There are a host of reasons why simulation modeling is valuable for the workshop process and development of management tools. The primary advantage, of course, is to simulate scenarios and the impact of numerous variables on the population dynamics and potential for population extinction. Interestingly, not all advantages are related to generating useful management recommendations. The side-benefits are substantial.

- Population modeling supports consensus and instills ownership and pride during the workshop process. As groups begin to appreciate the complexity of the problems, they have a tendency to take more ownership of the process and the ultimate recommendations to achieve workable solutions.
- Population modeling forces discussion on biological and physical aspects and specification of assumptions, data, and goals. The lack of sufficient data of useable quality rapidly becomes apparent and identifies critical factors for further study (driving research and decision making), management, and monitoring. This not only influences assumptions, but also the group's goals.
- Population modeling generates credibility by using technology that non-biologically oriented groups can use to relate to population biology and the "real" problems. The acceptance of the computer as a tool for performing repetitive tasks has led to a common ground for persons of diverse backgrounds.
- Population modeling explicitly incorporates what we know about dynamics by allowing the simultaneous examination of multiple factors and interactions - more than can be considered in analytical models. The ability to alter these parameters in a systematic fashion allows testing a multitude of scenarios that can guide adaptive management strategies.
- Population modeling can be a neutral computer "game" that focuses attention while providing persons of diverse agendas the opportunity to reach consensus on difficult issues.
- Population modeling results can be of political value for people in governmental agencies by providing support for perceived population trends and the need for action. It helps managers to justify resource allocation for a program to their superiors and budgetary agencies as well as identify areas for intensifying program efforts.

Modeling Tools: At the present time, our preferred model for use in the population simulation modeling process is called *VORTEX*. This model, developed by Bob Lacy (Chicago Zoological Society), is designed specifically for use in the stochastic simulation of the extinction process in small wildlife populations. It has been developed in collaboration and cooperation with the CBSG PHVA process. The model simulates deterministic forces as well as demographic, environmental, and genetic events in relation to their probabilities. It includes modules for catastrophes, density dependence, metapopulation dynamics, and inbreeding effects. The *VORTEX* model analyzes a population in a stochastic and probabilistic fashion. It also makes predictions that are testable in a scientific manner, lending more credibility to the process of using population-modeling tools.

There are other commercial models, but presently they have some limitations such as failing to measure genetic effects, being difficult to use, or failing to model individuals. *VORTEX* has been successfully used in more than 90 PHVA workshops in guiding management decisions. *VORTEX* is general enough for use when dealing with a broad range of species, but specific enough to incorporate most of the important processes. It is continually evolving in conjunction with the PHVA process. *VORTEX* has, as do all models, its limitations, which may restrict its utility. The model analyzes a population in a stochastic and probabilistic fashion. It is now at Version 8.1 through the cooperative contributions of dozens of biologists. It has been the subject of a series of both published and in-press validation studies and comparisons with other modeling tools. More than 2000 copies of *VORTEX* are in circulation and it is being used as a teaching tool in university courses.

We use this model and the experience we have with it as a central tool for the population dynamic aspects of the Workshop process. Additional modules, building on other simulation modeling tools for human population dynamics (which we have used in 3 countries) with potential impacts on water usage, harvesting effects, and physical factors such as hydrology and water diversion will be developed to provide input into the population and habitat models which can then be used to evaluate possible effects of different management scenarios. No such composite models are available.

CBSG Resources as a Unique Asset

Expertise and Costs: The problems and threats to endangered species everywhere are complex and interactive with a need for information from diverse specialists. No agency or country encompasses all of the useful expert knowledge. Thus, there is a need to include a wide range of people as resources and analysts. It is important that the invited experts have reputations for expertise, objectivity, initial lack of local stake, and for active transfer of wanted skills. CBSG has a volunteer network of more than 700 experts with about 250 in the USA. More than 3,000 people from 400 organizations have assisted CBSG on projects and participated in workshops on a volunteer basis contributing tens of thousands of hours of time. We will call upon individual experts to assist in all phases of this project.

Indirect cost contributions to support: Use of CBSG resources and the contribution of participating experts provide a matching contribution more than equaling the proposed budget request for projects.

Manuals and Reports: We have manuals available that provide guidance on the goals, objectives, and preparations needed for CBSG workshops. These help to reduce startup time and costs and allow us to begin work on organizing the project immediately with proposed participants and stockholders. We have a process manual for use by local organizers, which goes into detail on all aspects of organizing, conducting, and preparing reports from the workshops. Draft reports are prepared during the workshop so that there is agreement by participants on its content and recommendations. Reports are also prepared on the mini-workshops (working groups) that will be conducted in information gathering exercises with small groups of experts and stakeholders. We can print reports within 24-48 hours of preparation of final copy. We also have CD-ROM preparation facilities, software and experience.

References

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- Vredenburg, H., F. Westley, and U. Seal. 1999. The science and management of biodiversity conservation: Results of an international, longitudinal survey study. *Conservation Biology*, in preparation.

IUCN/SSC Guidelines For Re-Introductions

Prepared by the SSC [Re-introduction Specialist Group](#) *

Approved by the 41st Meeting of the IUCN Council, Gland Switzerland, May 1995

INTRODUCTION

These policy guidelines have been drafted by the Re-introduction Specialist Group of the IUCN's Species Survival Commission ([1](#)), in response to the increasing occurrence of re-introduction projects worldwide, and consequently, to the growing need for specific policy guidelines to help ensure that the re-introductions achieve their intended conservation benefit, and do not cause adverse side-effects of greater impact. Although IUCN developed a Position Statement on the [Translocation of Living Organisms](#) in 1987, more detailed guidelines were felt to be essential in providing more comprehensive coverage of the various factors involved in re-introduction exercises.

These guidelines are intended to act as a guide for procedures useful to re-introduction programmes and do not represent an inflexible code of conduct. Many of the points are more relevant to re-introductions using captive-bred individuals than to translocations of wild species. Others are especially relevant to globally endangered species with limited numbers of founders. Each re-introduction proposal should be rigorously reviewed on its individual merits. It should be noted that re-introduction is always a very lengthy, complex and expensive process.

Re-introductions or translocations of species for short-term, sporting or commercial purposes - where there is no intention to establish a viable population - are a different issue and beyond the scope of these guidelines. These include fishing and hunting activities.

This document has been written to encompass the full range of plant and animal taxa and is therefore general. It will be regularly revised. Handbooks for re-introducing individual groups of animals and plants will be developed in future.

CONTEXT

The increasing number of re-introductions and translocations led to the establishment of the IUCN/SSC Species Survival Commission's Re-introduction Specialist Group. A priority of the Group has been to update IUCN's 1987 Position Statement on the Translocation of Living Organisms, in consultation with IUCN's other commissions.

It is important that the Guidelines are implemented in the context of IUCN's broader policies pertaining to biodiversity conservation and sustainable management of natural resources. The philosophy for environmental conservation and management of IUCN and other conservation bodies is stated in key documents such as "Caring for the Earth" and "Global Biodiversity Strategy" which cover the broad themes of the need for approaches with community involvement and participation in sustainable natural resource conservation, an overall enhanced quality of human life and the need to conserve and, where necessary, restore ecosystems. With regards to the latter, the re-introduction of a species is one specific instance of restoration where, in general, only this species is missing. Full restoration of an array of plant and animal species has rarely been tried to date.

Restoration of single species of plants and animals is becoming more frequent around the world. Some succeed, many fail. As this form of ecological management is increasingly common, it is a priority for the Species Survival Commission's Re-introduction Specialist Group to develop guidelines so that re-

introductions are both justifiable and likely to succeed, and that the conservation world can learn from each initiative, whether successful or not. It is hoped that these Guidelines, based on extensive review of case - histories and wide consultation across a range of disciplines will introduce more rigour into the concepts, design, feasibility and implementation of re-introductions despite the wide diversity of species and conditions involved.

Thus the priority has been to develop guidelines that are of direct, practical assistance to those planning, approving or carrying out re-introductions. The primary audience of these guidelines is, therefore, the practitioners (usually managers or scientists), rather than decision makers in governments. Guidelines directed towards the latter group would inevitably have to go into greater depth on legal and policy issues.

1. DEFINITION OF TERMS

"Re-introduction": an attempt to establish a species [\(2\)](#) in an area which was once part of its historical range, but from which it has been extirpated or become extinct [\(3\)](#) ("Re-establishment" is a synonym, but implies that the re-introduction has been successful).

"Translocation": deliberate and mediated movement of wild individuals or populations from one part of their range to another.

"Re-enforcement/Supplementation": addition of individuals to an existing population of conspecifics.

"Conservation/Benign Introductions": an attempt to establish a species, for the purpose of conservation, outside its recorded distribution but within an appropriate habitat and eco-geographical area. This is a feasible conservation tool only when there is no remaining area left within a species' historic range.

2. AIMS AND OBJECTIVES OF RE-INTRODUCTION

a. Aims:

The principle aim of any re-introduction should be to establish a viable, free-ranging population in the wild, of a species, subspecies or race, which has become globally or locally extinct, or extirpated, in the wild. It should be re-introduced within the species' former natural habitat and range and should require minimal long-term management.

b. Objectives:

The objectives of a re-introduction may include: to enhance the long-term survival of a species; to re-establish a keystone species (in the ecological or cultural sense) in an ecosystem; to maintain and/or restore natural biodiversity; to provide long-term economic benefits to the local and/or national economy; to promote conservation awareness; or a combination of these.

3. MULTIDISCIPLINARY APPROACH

A re-introduction requires a multidisciplinary approach involving a team of persons drawn from a variety of backgrounds. As well as government personnel, they may include persons from governmental natural resource management agencies; non-governmental organisations; funding bodies; universities; veterinary institutions; zoos (and private animal breeders) and/or botanic gardens, with a full range of suitable expertise. Team leaders should be responsible for coordination between the various bodies and provision should be made for publicity and public education about the project.

4. PRE-PROJECT ACTIVITIES

4a. BIOLOGICAL

(i) Feasibility study and background research

- An assessment should be made of the taxonomic status of individuals to be re-introduced. They should preferably be of the same subspecies or race as those which were extirpated, unless adequate numbers are not available. An investigation of historical information about the loss and fate of individuals from the re-introduction area, as well as molecular genetic studies, should be undertaken in case of doubt as to individuals' taxonomic status. A study of genetic variation within and between populations of this and related taxa can also be helpful. Special care is needed when the population has long been extinct.
- Detailed studies should be made of the status and biology of wild populations (if they exist) to determine the species' critical needs. For animals, this would include descriptions of habitat preferences, intraspecific variation and adaptations to local ecological conditions, social behaviour, group composition, home range size, shelter and food requirements, foraging and feeding behaviour, predators and diseases. For migratory species, studies should include the potential migratory areas. For plants, it would include biotic and abiotic habitat requirements, dispersal mechanisms, reproductive biology, symbiotic relationships (e.g. with mycorrhizae, pollinators), insect pests and diseases. Overall, a firm knowledge of the natural history of the species in question is crucial to the entire re-introduction scheme.
- The species, if any, that has filled the void created by the loss of the species concerned, should be determined; an understanding of the effect the re-introduced species will have on the ecosystem is important for ascertaining the success of the re-introduced population.
- The build-up of the released population should be modelled under various sets of conditions, in order to specify the optimal number and composition of individuals to be released per year and the numbers of years necessary to promote establishment of a viable population.
- A Population and Habitat Viability Analysis will aid in identifying significant environmental and population variables and assessing their potential interactions, which would guide long-term population management.

(ii) Previous Re-introductions

- Thorough research into previous re-introductions of the same or similar species and wide-ranging contacts with persons having relevant expertise should be conducted prior to and while developing re-introduction protocol.

(iii) Choice of release site and type

- Site should be within the historic range of the species. For an initial re-inforcement there should be few remnant wild individuals. For a re-introduction, there should be no remnant population to prevent disease spread, social disruption and introduction of alien genes. In some circumstances, a re-introduction or re-inforcement may have to be made into an area which is fenced or otherwise delimited, but it should be within the species' former natural habitat and range.

- A conservation/ benign introduction should be undertaken only as a last resort when no opportunities for re-introduction into the original site or range exist and only when a significant contribution to the conservation of the species will result.
- The re-introduction area should have assured, long-term protection (whether formal or otherwise).

(iv) Evaluation of re-introduction site

- Availability of suitable habitat: re-introductions should only take place where the habitat and landscape requirements of the species are satisfied, and likely to be sustained for the foreseeable future. The possibility of natural habitat change since extirpation must be considered. Likewise, a change in the legal/ political or cultural environment since species extirpation needs to be ascertained and evaluated as a possible constraint. The area should have sufficient carrying capacity to sustain growth of the re-introduced population and support a viable (self-sustaining) population in the long run.
- Identification and elimination, or reduction to a sufficient level, of previous causes of decline: could include disease; over-hunting; over-collection; pollution; poisoning; competition with or predation by introduced species; habitat loss; adverse effects of earlier research or management programmes; competition with domestic livestock, which may be seasonal. Where the release site has undergone substantial degradation caused by human activity, a habitat restoration programme should be initiated before the re-introduction is carried out.

(v) Availability of suitable release stock

- It is desirable that source animals come from wild populations. If there is a choice of wild populations to supply founder stock for translocation, the source population should ideally be closely related genetically to the original native stock and show similar ecological characteristics (morphology, physiology, behaviour, habitat preference) to the original sub-population.
- Removal of individuals for re-introduction must not endanger the captive stock population or the wild source population. Stock must be guaranteed available on a regular and predictable basis, meeting specifications of the project protocol.
- Individuals should only be removed from a wild population after the effects of translocation on the donor population have been assessed, and after it is guaranteed that these effects will not be negative.
- If captive or artificially propagated stock is to be used, it must be from a population which has been soundly managed both demographically and genetically, according to the principles of contemporary conservation biology.
- Re-introductions should not be carried out merely because captive stocks exist, nor solely as a means of disposing of surplus stock.
- Prospective release stock, including stock that is a gift between governments, must be subjected to a thorough veterinary screening process before shipment from original source. Any animals found to be infected or which test positive for non-endemic or contagious pathogens with a potential impact on population levels, must be removed from the consignment, and the uninfected, negative remainder must be placed in strict quarantine for a suitable period before retest. If clear after retesting, the animals may be placed for shipment.

- Since infection with serious disease can be acquired during shipment, especially if this is intercontinental, great care must be taken to minimize this risk.
- Stock must meet all health regulations prescribed by the veterinary authorities of the recipient country and adequate provisions must be made for quarantine if necessary.

(vi) Release of captive stock

- Most species of mammal and birds rely heavily on individual experience and learning as juveniles for their survival; they should be given the opportunity to acquire the necessary information to enable survival in the wild, through training in their captive environment; a captive bred individual's probability of survival should approximate that of a wild counterpart.
- Care should be taken to ensure that potentially dangerous captive bred animals (such as large carnivores or primates) are not so confident in the presence of humans that they might be a danger to local inhabitants and/or their livestock.

4b. SOCIO-ECONOMIC AND LEGAL REQUIREMENTS

- Re-introductions are generally long-term projects that require the commitment of long-term financial and political support.
- Socio-economic studies should be made to assess impacts, costs and benefits of the re-introduction programme to local human populations.
- A thorough assessment of attitudes of local people to the proposed project is necessary to ensure long term protection of the re-introduced population, especially if the cause of species' decline was due to human factors (e.g. over-hunting, over-collection, loss or alteration of habitat). The programme should be fully understood, accepted and supported by local communities.
- Where the security of the re-introduced population is at risk from human activities, measures should be taken to minimise these in the re-introduction area. If these measures are inadequate, the re-introduction should be abandoned or alternative release areas sought.
- The policy of the country to re-introductions and to the species concerned should be assessed. This might include checking existing provincial, national and international legislation and regulations, and provision of new measures and required permits as necessary.
- Re-introduction must take place with the full permission and involvement of all relevant government agencies of the recipient or host country. This is particularly important in re-introductions in border areas, or involving more than one state or when a re-introduced population can expand into other states, provinces or territories.
- If the species poses potential risk to life or property, these risks should be minimised and adequate provision made for compensation where necessary; where all other solutions fail, removal or destruction of the released individual should be considered. In the case of migratory/mobile species, provisions should be made for crossing of international/state boundaries.

5. PLANNING, PREPARATION AND RELEASE STAGES

- Approval of relevant government agencies and land owners, and coordination with national and international conservation organizations.

- Construction of a multidisciplinary team with access to expert technical advice for all phases of the programme.
 - Identification of short- and long-term success indicators and prediction of programme duration, in context of agreed aims and objectives.
 - Securing adequate funding for all programme phases.
 - Design of pre- and post- release monitoring programme so that each re-introduction is a carefully designed experiment, with the capability to test methodology with scientifically collected data. Monitoring the health of individuals, as well as the survival, is important; intervention may be necessary if the situation proves unforeseeably favourable.
 - Appropriate health and genetic screening of release stock, including stock that is a gift between governments. Health screening of closely related species in the re-introduction area.
 - If release stock is wild-caught, care must be taken to ensure that: a) the stock is free from infectious or contagious pathogens and parasites before shipment and b) the stock will not be exposed to vectors of disease agents which may be present at the release site (and absent at the source site) and to which it may have no acquired immunity.
 - If vaccination prior to release, against local endemic or epidemic diseases of wild stock or domestic livestock at the release site, is deemed appropriate, this must be carried out during the "Preparation Stage" so as to allow sufficient time for the development of the required immunity.
 - Appropriate veterinary or horticultural measures as required to ensure health of released stock throughout the programme. This is to include adequate quarantine arrangements, especially where founder stock travels far or crosses international boundaries to the release site.
 - Development of transport plans for delivery of stock to the country and site of re-introduction, with special emphasis on ways to minimize stress on the individuals during transport.
 - Determination of release strategy (acclimatization of release stock to release area; behavioural training - including hunting and feeding; group composition, number, release patterns and techniques; timing).
 - Establishment of policies on interventions (see below).
 - Development of conservation education for long-term support; professional training of individuals involved in the long-term programme; public relations through the mass media and in local community; involvement where possible of local people in the programme.
 - The welfare of animals for release is of paramount concern through all these stages.
-

6. POST-RELEASE ACTIVITIES

- Post release monitoring is required of all (or sample of) individuals. This most vital aspect may be by direct (e.g. tagging, telemetry) or indirect (e.g. spoor, informants) methods as suitable.
- Demographic, ecological and behavioural studies of released stock must be undertaken.
- Study of processes of long-term adaptation by individuals and the population.
- Collection and investigation of mortalities.
- Interventions (e.g. supplemental feeding; veterinary aid; horticultural aid) when necessary.
- Decisions for revision, rescheduling, or discontinuation of programme where necessary.

- Habitat protection or restoration to continue where necessary.
- Continuing public relations activities, including education and mass media coverage.
- Evaluation of cost-effectiveness and success of re- introduction techniques.
- Regular publications in scientific and popular literature.

Footnotes:

1. Guidelines for determining procedures for disposal of species confiscated in trade are being developed separately by IUCN.
2. The taxonomic unit referred to throughout the document is species; it may be a lower taxonomic unit (e.g. subspecies or race) as long as it can be unambiguously defined.
- 3 . A taxon is extinct when there is no reasonable doubt that the last individual has died

The IUCN/SSC Re-introduction Specialist Group

The IUCN/SSC Re-introduction Specialist Group (RSG) is a disciplinary group (as opposed to most SSC Specialist Groups which deal with single taxonomic groups), covering a wide range of plant and animal species. The RSG has an extensive international network, a re-introduction projects database and re-introduction library. The RSG publishes a bi-annual newsletter [RE-INTRODUCTION NEWS](#).

If you are a re-introduction practitioner or interested in re-introductions please contact:

IUCN/SSC Re-introduction Specialist Group (RSG),

c/o African Wildlife Foundation (AWF),

P.O. Box 48177,

Nairobi,

Kenya.

Tel:(+254-02) -710367, Fax: (+254-02) - 710372 or

E-Mail: awf.nrb@tt.gn.apc.org

Chimpanzee Sanctuaries: Guidelines and Management Workshop Report



Section 10

Appendices

- A: Mini-Sanctuary Data Matrix**
- B: Health Management**
- C: Behavioral Management**
- D: Care**

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 10

Appendices

A: Mini-Sanctuary Data Matrix

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	CHIMFUNSHI WILDLIFE ORPHANAGE
LOCATION	CHINGOLA
Mailing Address	P.O. BOX 11190 CHINGOLA, ZAMBIA
Telephone/Fax/Email/Website	TEL: 00 27 11 394 0465 / FAX: 00 27 11 606 2403 / EMAIL: chimps@yebo.co.za
Contact Name	Dave and Sheila Siddle
Overseas Contact	
Mailing Address	
Telephone/Fax/Email/Website	
Date established	1983
Present No of Chimps/Groups	76 chimps, 5 groups
Brief Staff composition	
• Director	
• Education Director	
• Caregivers	
• Security Guards	
• Volunteers	
ADDITIONAL INFORMATION:	
Capacity	
Acquisition rate (1997,1998,1999)	Expect to possibly receive 19 this year.
Estimate number illegally held	
Budget	
Area of Expertise	

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	CHIMPANZEE CONSERVATION CENTER / CENTRE DO CONSERVATION POUR CHIMPANZES
LOCATION	
Mailing Address	DNEF BP 624 CONAKRY, GUINEE
Telephone/Fax/Email/Website	TEL: (224) 22 39 07
Contact Name	CHRISTINE SAGUO
Overseas Contact	PROJECT PRIMATE, Inc.
Mailing Address	P.O. BOX. 5216, CHAPEL HILL, NC 27514 – 5002
Telephone/Fax/Email/Website	TEL: (919) 5442 7006 / FAX: (561) 619 5799 / EMAIL: pprimate@envirolink.org / WEBSITE / projectprimate.org
Date established	End of 1996
Present No of Chimps/Groups	26 chimpanzees split into 3 groups + 1 nursery + 1 quarantine
Brief Staff composition	
• Director	Estelle Raballand
• Education Director	
• Caregivers	3
• Security Guards	
• Volunteers	2
Other	1 driver
ADDITIONAL INFORMATION:	
Capacity	10 –15 young (capacity exceeded)
Acquisition rate (1997,1998,1999)	0 - capacity full
Estimate number illegally held	100
Budget	US\$22,000
Area of Expertise	

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	DAVID GREYBEARD SANCTUARY
LOCATION	KROMDRAAI VALLEY, SOUTH AFRICA
Mailing Address	
Telephone/Fax/Email/Website	TEL: (27) 11 717 2521 / EMAIL: mwggi@mweb.co.za / janegoodall.org.za
Contact Name	PROF. PETER GRAY
Overseas Contact	
Mailing Address	
Telephone/Fax/Email/Website	
Date established	2000
Present No of Chimps/Groups	6
Brief Staff composition	To be appointed
• Director	
• Education Director	
• Caregivers	
• Security Guards	
• Volunteers	
ADDITIONAL INFORMATION:	
Capacity	+/- 60
Acquisition rate (1997,1998,1999)	??
Estimate number illegally held	
Budget	US\$100,000
Area of Expertise	Subspecies identification, fencing, solar, infection identification and control

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	JANIS CARTER - GAMBIA
LOCATION	
Mailing Address	
Telephone/Fax/Email/Website	
Contact Name	
Overseas Contact	
Mailing Address	
Telephone/Fax/Email/Website	
Date established	
Present No of Chimps/Groups	
Brief Staff composition	
• Director	
• Education Director	
• Caregivers	
• Security Guards	
• Volunteers	
Other	
ADDITIONAL INFORMATION:	
Capacity	
Acquisition rate (1997,1998,1999)	
Estimate number illegally held	
Budget	
Area of Expertise	

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	HELP CONGO
LOCATION	REPUBLIC OF CONGO, CONKOUATI RESERVE OF FAUNA
Mailing Address	
Telephone/Fax/Email/Website	TEL: 94 15 20 / EMAIL: jean-jacques.fontaine@elf-p.fr
Contact Name	Mme Aliette Jamart / Mr. Jean – Jacques Fontaine
Overseas Contact	Mrs Laurence Vial / Mrs Stephanie Latour/ Mr Romain Glaque (HELP International)
Mailing Address	Laurevial@aol.com / slatour@aol.com / romain.calaque@free.fr
Telephone/Fax/Email/Website	Tel: (33) 1 45 47 74 78 / (33) 6 16 99 05 02 (laurence vial) / http://www.help-primates.org
Date established	1989 (Nursery for 2 years in Pointe Noir and then they were transferred to islands in '91)
Present No of Chimps/Groups	20 released chimpanzees / 27 chimpanzees on the islands (2 babies included)
Brief Staff composition	I permanent manager for rehabilitation required if possible.
• Director	Mme Aliette Jamart
• Education Director	0
• Caregivers	12 observers (with turnover) 4 caregivers
• Security Guards	1
• Volunteers	Over all year and students for specific studies as well.
Other	1 driver, 1 vet in the release site and he comes regularly to rehab center and can be called in emergency.
ADDITIONAL INFORMATION:	
Capacity	Full
Acquisition rate (1997,1998,1999)	0
Estimate number illegally held	Approx 100
Budget	2500 000 CFA
Area of Expertise	Reintroduction and Radio telemetry (collars)

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	KITWE POINT
LOCATION	KIGOMA, TANZANIA
Mailing Address	P.O. BOX 767, KIGOMA, TANZANIA
Telephone/Fax/Email/Website	TEL: (255) 695 3404 / FAX: (255) 695 4448 / EMAIL: mac.zwick@twiga.com www.janegoodall.org
Contact Name	JOHN MACLACHLAN
Overseas Contact	JGI USA
Mailing Address	P.O. BOX 14890, SILVER SPRING, MD 20911
Telephone/Fax/Email/Website	TEL: (301) 565 0086 / FAX: (301) 565 3188 / EMAIL: jgiinformation@janegoodall.org
Date established	1995
Present No of Chimps/Groups	3 chimpanzees in 1 group – due to be moved
Brief Staff composition	2 ecoguards
• Director	1
• Education Director	
• Caregivers	2
• Security Guards	
• Volunteers	
ADDITIONAL INFORMATION:	
Capacity	21 – but with limited facilities
Acquisition rate	None for the last three years.
Estimate number illegally held	
Budget	25,000 (?£, ?\$)
Area of Expertise	Sanctuary design, holding facility design, solar & wind power, remote communications, micro hydro power, electric fencing, general technical planning and purchasing research, computers and digital imaging.

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	LIMBE WILDLIFE CENTER
LOCATION	LIMBE, SOUTHWEST PROVINCE, CAMEROON
Mailing Address	P.O. BOX 878, LIMBE, S.W.P. CAMEROON
Telephone/Fax/Email/Website	237 43 18 83/ 237 43 17 46/ jacworth@compuserve.com/ delvisions@hotmail.com
Contact Name	ATEH WILSON BERN
Overseas Contact	IPPL (UK) STEPHEN BREND
Mailing Address	116 JUDD STREET, LONDON WC1 9NS
Telephone/Fax/Email/Website	Tel: 0207 837 7227 / Fax: 0207 278 8316 / email: clovenhoof@easynet.co.uk
Date established	DEC 1993
Present No of Chimps/Groups	21 CHIMPANZEES SPLIT INTO 2 GROUPS
Brief Staff composition	NATIONAL STAFF: 22, EXPATRIATE STAFF: 2
• Director	1
• Education Director	1
• Caregivers	22
• Security Guards	3
• Volunteers	2
	The Limbe Wildlife Centre is a collaboration between Pandrillus and the Ministry of Environment and Forest, Government of Cameroon. The sanctuary has a strong educational emphasis and not only has an education center but an outreach programme to schools villages and hunting camps. In addition to chimpanzee, this sanctuary cares for a variety of other endangered primate and non primate species.
ADDITIONAL INFORMATION:	
Capacity	30
Acquisition rate	1997 – 2 chimpanzees, 1998 – 1 chimpanzee 1999 – 1 chimpanzee
Estimate number illegally held	400 – 500
Budget	US\$25,000
Area of Expertise	Electric Fencing, vet, education, fundraising.

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	NGAMBA ISLAND CHIMPANZEE SANCTUARY
LOCATION	NGAMBA ISLAND, LAKE VICTORIA, UGANDA
Mailing Address	P.O. BOX 369, ENTEBBE, UGANDA
Telephone/Fax/Email/Website	TEL: (256) 41 320520 / MOBILE: (256) 77 200602/ FAX: (256) 41 320073 / EMAIL: chimpldy@imul.com
Contact Name	DEBBY COX / WILHELM MOELLER
Overseas Contact	BECKY HARRIS JONES (Born Free Foundation), PETER HEMMELSBECK (J.G.I. Germany), CINDY MILBURN (IFAW), STEVE RESS (ZPB)
Mailing Address	See workshop directory.
Telephone/Fax/Email/Website	
Date established	1998
Present No of Chimps/Groups	27
Brief Staff composition	5 keeper, 1 project director, 1 maintenance,
• Director	1
• Education Director	To be filled by 2001
• Caregivers	5
• Security Guards	2
• Volunteers	2
ADDITIONAL INFORMATION:	Project director is situated in Entebbe, small group of 5 chimps maintained at UWEC which Project Director does assist with management decision of quarantine is done at UWEC.
Capacity	35
Acquisition rate (1997,1998,1999)	1 in 1997, 6 in 1998, 6 in 1999
Estimate number illegally held	0
Budget	US\$ 60,000
Area of Expertise	Vet, holding facilities, integration, management practices, islands

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	PANDRILLICUS
LOCATION	CROSS RIVER STATE, NIGERIA
Mailing Address	H.E. P.O. 826
Telephone/Fax/Email/Website	2334 87 23334 310/ drill@hyperia.com
Contact Name	Peter Jenkins
Overseas Contact	IPPL (UK), IPPL (US), FFI
Mailing Address	
Telephone/Fax/Email/Website	
Date established	1991
Present No of Chimps/Groups	16
Brief Staff composition	This includes directors no? manager, volunteers, senior keeper, keepers, camp house
• Director	Assistants, Education/community liaison officer, construction foremen, work crew,
• Education Director	Food buyers, security staff, range patrol crew.
• Caregivers	
• Security Guards	
• Volunteers	
ADDITIONAL INFORMATION:	
Capacity	20
Acquisition rates for 1997/1998/1999	1997 – 1 chimpanzee; 1998 – 1 chimpanzee: 1999 – 2 chimpanzees
Estimated number illegally held	100 – 150
Budget	£35000 / \$80,000 for whole project including drills.
Area of Expertise	Veterinary protocol, general operations, construction conservation.

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	SANAGA – YONG CHIMPANZEE RESCUE CENTER
LOCATION	CENTRAL CAMEROON
Mailing Address	B.P. 1361, YAOUNDE, CAMEROON
Telephone/Fax/Email/Website	237 21 78 07 / s_speede@yahoo.com
Contact Name	SHERI SPEEDE
Overseas Contact	EDMUND STOWE
Mailing Address	700 SW 126 TH AVE, BEAVERTON, OR 97005 USA
Telephone/Fax/Email/Website	503 643 9948/ 503 643 8302/ 503 526 1195/ wirtresum@aol.com
Date established	August 1999
Present No of Chimps/Groups	8/2
Brief Staff composition	
• Director	1
• Education Director	1
• Caregivers	4
• Security Guards	3
• Volunteers	2
ADDITIONAL INFORMATION:	
Capacity	20 with current enclosures
Acquisition rate	On average 1 per month
Estimate number illegally held	300
Budget	\$40,000
Area of Expertise	Veterinary

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	SANCTUAIRE DES BONOBOBOS DE KINSHASHA
LOCATION	DEMOCRATIC REPUBLIC OF CONGO
Mailing Address	By Post you can only DHL: Sanctuaire des bonobos de Kinshasha, T.A.S.O.K., Commune de Ngaliena, Kinshasha, DRC.
Telephone/Fax/Email/Website	TEL: 00.243.88.40009 / EMAIL: claudine@ic.cd
Contact Name	CLAUDINE ANDRE.
Overseas Contact	
Mailing Address	
Telephone/Fax/Email/Website	
Date established	1994
Present No of Chimps/Groups	11 bonobos
Brief Staff composition	
• Director	1
• Education Director	1
• Caregivers	1
• Security Guards	
• Volunteers	
Health Care	1
DESIGN/ EDUCATION CONCEPTION	1
ADDITIONAL INFORMATION:	
Capacity	
Acquisition state	
Estimate number illegally held	
Budget	
Area of Expertise	

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	SWEETWATERS CHIMPANZEE SANCTUARY
LOCATION	NR. NANYUKI, KENYA
Mailing Address	P.O. BOX 167 NANYUKI, KENYA
Telephone/Fax/Email/Website	TEL: 254 176 32408 / EMAIL: ann.olivecrona@swiftkenya.com
Contact Name	ANNIE OLIVECRONA
Overseas Contact	J.G.I. / U.K – DILYS MACKINNON
Mailing Address	15 CLARENDON PARK LANE, LYMMINGTON, HANTS, UK
Telephone/Fax/Email/Website	TEL: (44) 01590 671188 / FAX: (44) 01590 670 887/ EMAIL: dilys@janegoodall.org.uk
Date established	1994
Present No of Chimps/Groups	25 chimpanzees in 2 different groups
Brief Staff composition	6 keepers (including foreman), 4 fencers, 1 gardener/maintenance,
• Director	1
• Education Director	1 – the director as above
• Caregivers	6
• Security Guards	2
• Volunteers	0
ADDITIONAL INFORMATION:	Sanctuary size is a total of 212 acres divided into two areas. Housing facilities exists for both chimp groups in different locations. Small holding enclosures exist near each sanctuary
Capacity	60
Acquisition rate	None for last 5 years
Estimate number illegally held	25
Budget	\$100,000
Area of Expertise	Introducing chimpanzees into “open” habitat.

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	TACUGAMA CHIMPANZEE SANCTUARY
LOCATION	WESTERN AREA FOREST RESERVE, SIERRA LEONE, WEST AFRICA
Mailing Address	P.O. BOX 469, FREETOWN, SIERRA LEONE
Telephone/Fax/Email/Website	TEL: (232) 22 23 0788 / 224098 FAX: (232) 22 222683 / EMAIL: sab@sierratel.sl
Contact Name	BALA AMAARASEKARAN – SIERRA LEONE
Overseas Contact	ROSALIND ALP: FOUNDATION STEP BY STEP
Mailing Address	BERGWEG 6, 9462 RK
Telephone/Fax/Email/Website	TEL: (33) 0599 564 795 / FAX: same as telephone. / EMAIL: hanson-alp@amazed.nl
Date established	1996
Present No of Chimps/Groups	32
Brief Staff composition	
• Director	1
• Education Director	1
• Caregivers	4
• Security Guards	
• Volunteers	
Health Care	
DESIGN/ EDUCATION CONCEPTION	
ADDITIONAL INFORMATION:	
Capacity	35-40
Acquisition rate	This year – 6 chimps, 1999 – 4/5 chimpanzees
Estimate number illegally held	100
Budget	US\$ 40 – 50, 000
Area of Expertise	Survival in war zone

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	TCHIMPOUNGA
LOCATION	POONTE NOIRE, PEOPLES REPUBLIC OF CONGO
Mailing Address	
Telephone/Fax/Email/Website	
Contact Name	GRAZIELLA COTMAN
Overseas Contact	J.G.I. (UK) DILYS MCKINNON
Mailing Address	15 CLARENDON PARK, LYMINGTON, HAMPS SO441 8AX, UK
Telephone/Fax/Email/Website	TEL; (44) 01590 671188 / FAX: (44) 01590 670 887 / info@janegoodall.org.uk
Date established	1992
Present No of Chimps/Groups	76 chimpanzees in 4/5 groups)
Brief Staff composition	40 staff in general
• Director	1 – Graziella Cotman
• Education Director	
• Caregivers	
• Security Guards	
• Volunteers	
ADDITIONAL INFORMATION:	
Capacity	30 – 40
Acquisition rate (1997,1998,1999)	Approximate 1 every 2 months
Estimate number illegally held	
Budget	US\$ 300,000
Area of Expertise	Chimpanzee care

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	YAOUNDE ZOO / MEFOU NATIONAL PARK
LOCATION	CENTRAL PROVINCE, CAMEROON
Mailing Address	BP 2008, MESSA, YAOUNDE
Telephone/Fax/Email/Website	TEL: (237) 31 90 45 / FAX: (237) 20 75 78 / EMAIL: cwaf@camnet.com / www.cwaf.org
Contact Name	CHRIS MITCHELL
Overseas Contact	NEIL MADDISON
Mailing Address	BRISTOL ZOO GARDENS, CLIFTON, BRISTOL, BS8 3HT, U.K.
Telephone/Fax/Email/Website	TEL: (44) 0117 970 6176 / FAX: 0117 973 6814 / EMAIL: nmaddison@bristolzoo.org.uk www.bristolzoo.org.uk
Date established	
Present No of Chimps/Groups	07/08/1997
Brief Staff composition	25 chimps / 3 groups
• Director	
• Education Director	1
• Caregivers	1
• Security Guards	7
• Volunteers	8
	1
ADDITIONAL INFORMATION:	CAMEROON WILDLIFE AID FUND (CWF) is the umbrella conservation organisation that funds and operates the sanctuary, CWF is involved in primate conservation and education, in particular countering the bushmeat trade.
Capacity	30
Acquisition rate	In the last 3 years – 30
Estimate number illegally held	300
Budget	US\$30,000
Area of Expertise	

Signature.....

Date.....

MINI SANCTUARY MATRIX:

NAME OF SANCTUARY	ZAIRE – DEMOCRATIC REPUBLIC OF CONGO
LOCATION	
Mailing Address	
Telephone/Fax/Email/Website	
Contact Name	
Overseas Contact	
Mailing Address	
Telephone/Fax/Email/Website	
Date established	
Present No of Chimps/Groups	
Brief Staff composition	
• Director	
• Education Director	
• Caregivers	
• Security Guards	
• Volunteers	
Other	
ADDITIONAL INFORMATION:	
Capacity	
Acquisition rate (1997,1998,1999)	
Estimate number illegally held	
Budget	
Area of Expertise	

Signature.....

Date.....

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 10

Appendices

B: Health Management

SANCTUARY MANAGEMENT
Health Working Group Report: Appendices

Appendix 1: CHIMPANZEES NECROPSY WORKSHEET

CHIMPANZEES DETAILS:

Common name:
House name:
Transponder/tattoo number:
Studbook number:

Latin name:
House number:
ISIS number:

Date of birth:
Origin:
Age:

Date of arrival:
Sex:
Weight:

Date of death:
Facility where death occurred:
Gross necropsy performed by:
Histopathology performed by:
Microbiology performed by:

Date of necropsy:

Contact name & address:

HISTORY

Include clinical signs, treatments, antemortem test results, diet, circumstances of death and quarantine status.

Attach copy of medical record.

Appendix 2: GROSS EXAMINATION FINDINGS

General Condition: (Nutritional condition, physical condition)

Musculoskeletal System: (Bones, joints, muscles)

Body Cavities: (Fat stores, abnormal fluids)

Haemolymphatic: (Spleen, lymph nodes, thymus)

Respiratory System: (Nasal cavity, larynx, trachea, lungs, regional lymph nodes)

Cardiovascular System: (Heart, pericardium, great vessels)

Digestive System: (Mouth, teeth, oesophagus, stomach, intestines, liver, pancreas, mesenteric lymph nodes)

Urinary System: (Kidneys, ureters, urinary bladder, urethra)

Reproduction System: (Testis/ovaries, uterus, oviduct, vagina, penis, prepuce, accessory glands, mammary glands, placenta)

Endocrine System: (Adrenals, thyroid, parathyroids, pituitary)

Nervous and Sensory Systems: (Brain, spinal cord, peripheral nerves, eyes, ears)

NEONATES

In addition to the adult protocol, include the following:

- 1) Examine umbilical stump and surrounding tissues.
- 2) Examine for malformations (cleft palate, deformed limbs, etc)
- 3) Assess hydration (tissue moistness) and evidence of sucking/eating (milk or food in stomach)
- 4) Determine whether breathing occurred (do the lungs float in formal saline?)

GROSS DIAGNOSES

(List each lesion separately. Include organ, lesion type, distribution, severity)

SAMPLES SUBMITTED/STORED

(Give details of which tissues stored and how stored. Give details of samples submitted for laboratory tests).

MICROBIOLOGY STUDIES

(List bacterial, viral & fungal tests and attach results. List parasites submitted for identification and attach reports.)

NB: If the chimpanzee is post-mortem within 24hrs of death, submit a swab of heart blood for bacteriology.

HISTOPATHOLOGY STUDIES

(Attach reports and identify pathologist)

COMMENTS AND CONCLUSIONS

Appendix 3: TISSUE COLLECTION LIST:

Where at all possible, the samples of the following tissues should be fixed in 10% Formalin-saline labelled and stored for diagnostic and reference purposes. Tissues can be preserved for many years in formal saline or alternatively fixed tissue pieces can be embedded in paraffin wax and stored as the blocks. Samples of tissues should be < 0.5cm **max** in thickness except where otherwise indicated. Tissues should be fixed in at least 10x their own volume of formal saline.

Adrenal glands:	Entire gland with transverse incision.
Brain/pituitary gland:	Sliced longitudinally along the midline.
Gastrointestinal tract:	3cm long section of oesophagus, stomach (cardia, antrum, pylorus), duodenum, jejunum, ileum, caecum and colon. Open carefully along the long axis. Cross-section of tongue.
Heart:	Section including atrium, ventricle and valves from R & L heart.
Kidneys:	Section from both kidneys (cortex, medulla and pelvis).
Liver:	Sections from 3 lobes including capsule and gall bladder.
Long bone:	1/2 of a femur including growth plate unless skeleton is required for other purposes.
Lungs:	Sections from several lobes including a major bronchus.
Lymph nodes:	Cervical, anterior mediastinal, bronchial, mesenteric, and lumbar with a transverse cut.
Pancreas:	Representative sections from two areas.
Reproductive tract:	Entire uterus and ovaries with longitudinal cut into lumen. Entire testis with transverse cut, entire prostate with transverse cut.
Skeletal muscle:	Cross section of thigh muscles.
Skin:	Full thickness of dorsal skin.
Spleen:	Cross sections including capsule.
Thymus:	Representative section.
Thyroid/parathyroids:	Leave glands intact.
Bladder/ureter/urethra:	Cross section of bladder and 2cm sections of tubular structures.

Appendix 4 : SALT FLOTATION CONCENTRATION METHOD FOR HELMINTH OVA

This method is suitable for the concentration of worm eggs, but does not work for protozoal cysts. Fluke eggs tend to be destroyed after prolonged exposure to the salt solution, but nematode and tapeworm eggs concentrate satisfactorily.

Method.

1. Half fill a universal or similar bottle (around 20 - 25mls capacity) with a saturated solution of sodium chloride. This can be made from any grade of salt, egg. cooking or table salt, or even rock salt. Add salt to hot water until no more will dissolve and then allow to cool.
2. Emulsify about 0.5 gram of faeces, removing any large vegetable material, in the salt solution with a stick or glass rod.
3. Top up the tube with salt solution using a plastic pipette or similar, until the tube is filled to the brim.
4. Carefully place a clean microscope slide on top of the bottle, ensuring that the glass touches the salt solution. Avoid trapping air bubbles.
5. Leave undisturbed for 30 minutes to give the eggs time to float up to the surface. Do not leave longer as the eggs will begin to sink after an hour.
6. Carefully lift slide off the tube and turn correct way up, cover with a coverslip and check under the x 10 objective. If faeces was weighed, then multiply x2 to give numbers of eggs per gram.

Appendix 5: CHIMPANZEE ANAESTHESIA - GENERAL PRINCIPLES

Introduction

Although modern drugs have a wide safety margin in primates, none are absolutely safe and the reaction of any individual chimpanzees to anaesthesia can be unpredictable. Therefore there is no such thing as "risk-free" anaesthesia and it follows that anaesthesia should never be undertaken lightly. Most drugs and drug combinations have advantages and disadvantages and it is important to use a technique with which the anaesthetist is familiar. A short list of some anaesthetics and anaesthetic combinations with appropriate dose rates are given in a later section.

Pre-anaesthetic assessment and preparation

It is important to review the previous anaesthetics in the individual. Careful anaesthetic records should be kept and filed for future use.

Many of the problems that can occur during anaesthesia are avoidable by careful pre-anaesthetic assessment of the patient and consideration of the conditions under which anaesthesia is to be performed. In emergencies such as the recovery of an escaped chimpanzee this is not always possible, but even in this situation thought should have been given to what will be needed in advance of the event.

Prior to anaesthesia a chimpanzee's general condition should be assessed, its medical history considered and its weight determined (often by estimation or from previous notes) in order to select the most appropriate drug and dose. It is also necessary to consider what type of anaesthesia is required - profound for surgical intervention, light for blood sampling or examination etc. Preanaesthetic consideration should be given to the possibility of dehydration, shock or the presence of disease, which may complicate the anaesthetic or require immediate attention once the chimpanzees is anaesthetised.

The physical assessment of a chimpanzee prior to anaesthesia can be difficult and may even require the use of binoculars. If any doubt exists, time spent quietly observing a chimpanzee prior to anaesthesia will be profitable. Poor water intake, diarrhoea, vomiting, sunken eyes or unusually frequent urination may suggest dehydration. Where there is a possibility of dehydration, equipment and materials should be prepared to allow aggressive fluid therapy during anaesthesia as primates rarely tolerate intravenous fluid administration when conscious. Coughing or breathlessness may indicate a respiratory problem, and it is important to appreciate that respiratory disease is common in primates.

Chimpanzees should be fasted before anaesthesia to reduce the risk of vomiting and subsequent inhalation of vomitus. 12 hours fasting is sufficient. Water should be withheld for 2 hours prior to anaesthesia.

No anaesthetic works immediately and consideration must be given to what may happen during the time between darting and induction of anaesthesia. If the chimpanzee is contained in a carrying box or crush cage during this period the potential for problems is minimised. However, if anaesthesia has to be induced by darting in outside enclosures the weather should be considered, pools drained, the risk of falling from platforms, trees etc after induction taken into account and unnecessary personnel kept away. **NEVER DART A CHIMPANZEE IN AN ENCLOSURE WHERE AN ELECTRIC FENCE IS ACTIVE.**

It is essential that chimpanzees are not excited prior to or during anaesthetic induction. An excited chimpanzee will require higher anaesthetic doses and take longer to become recumbent. Both these factors, plus the higher adrenaline levels circulating in excited chimpanzees increase the potential for complications during anaesthesia. Hearing is usually the last sense to be abolished by an anaesthetic, therefore it is also important to have quiet to avoid disturbance during induction.

Methods of administering anaesthetic drugs

In the case of chimpanzees that can be safely hand-held, anaesthetic agents can be delivered by direct intramuscular injection into the quadriceps, hamstrings or shoulder muscles. Crush cages also allow relatively safe intramuscular injection of anaesthetic agents. In many circumstances however, chimpanzees will have to be darted. Ideally chimpanzees should not be darted when another is present in the cage or enclosure.

When using a blowpipe care should be taken to ensure that the anaesthetic agent is delivered intramuscularly and not subcutaneously, as the latter route may prolong the induction time or may fail to produce complete immobilisation.

Anaesthetic agents

A short list of some anaesthetics or anaesthetic combinations with appropriate dose rates is given in the appendix.

With all anaesthetic agents, dose rates given are only guidelines. Variations in response to these standardised dose rates will be seen in individual chimpanzees. Such variations depend on a host of factors such as general health status, pre-anaesthetic state of excitement, intercurrent disease, biological variations etc, etc.

After an anaesthetic agent has been delivered, it is important to allow sufficient time for its full effect to be realised. Therefore a minimum of 10-15 minutes should be allowed to elapse before a chimpanzee is disturbed, irrespective of whether it is down, unless an emergency situation such as respiratory arrest develops during this period. Failure to allow such a period may result in partial arousal during the induction period leading to a lighter plane of anaesthesia than would normally be expected with a given anaesthetic dose rate.

Maintenance of anaesthesia

When it is necessary to prolong anaesthesia beyond the time allowed by a single dose of the injectable induction agent, maintenance with gaseous anaesthetic agents eg isoflurane/halothane administered with oxygen via an endotracheal tube is the best option. However, certain injectable anaesthetic drugs (eg: ketamine) can be given in incremental intravenous doses. If supplementary anaesthetics are given in intramuscular increments the total recovery time may be significantly prolonged.

Assessment and monitoring of chimpanzees during anaesthesia

Following apparent immobilisation it is necessary to assess the effectiveness of anaesthesia before any procedures (including moving the chimpanzees) are carried out. This is especially important with large individuals which could be dangerous if incompletely immobilised. It is also necessary to constantly assess the well-being of a chimpanzee during anaesthesia as problems are easier to correct if detected early.

Responses to stimuli such as pinching between the toes, respiration rate, colour of mucous membranes (eg the lining of the mouth), pulse rate and quality, and muscle tone should all be assessed without delay after apparent immobilisation, and at regular intervals (5-10 minutes) thereafter. When the jaw is sufficiently relaxed, the mouth should be checked thoroughly and any food material, excess saliva or even pieces of dart or dart needles removed. Body temperature should be monitored and hypo- or hyperthermia corrected. Hyperthermia can result from pre-anaesthetic excitement, high ambient temperatures or direct sunlight during anaesthesia, or convulsions at any stage.

Once a chimpanzee is immobilised, place a small amount of an ophthalmic ointment onto the surface of the eyes to prevent drying of the cornea. Do not allow the sun to shine directly into the eyes of a chimpanzee at any stage during anaesthesia - irreversible damage may be done to the retina, especially if the pupils are dilated.

Whilst monitoring an anaesthesia, detailed notes or charts should be kept of all measured physiological parameters, including respiratory, heart rates, body temperature, pulse quality, mucous membrane colour and muscle tone. In this way, changes in the vital signs - even subtle ones - can be easily appreciated and reference may be made to a particular chimpanzee's response to anaesthesia at a later date. Suitable forms for such recording are provided at the end of this section. Always record a chimpanzee's weight during anaesthesia so that accurate dose rates of anaesthetic agents can be calculated retrospectively.

Recovery from anaesthesia

Chimpanzees should be allowed to recover undisturbed from anaesthesia in quiet, dimly lit conditions. In hot weather, recovery areas should be cooled. Before leaving a chimpanzee to recover, the mouth and pharynx (back of throat) should be checked for saliva, food material, foreign bodies etc. The latter must be removed. Be particularly

careful after dental extractions as post-extraction haemorrhage can be significant. Monitoring of pulse, respiration and temperature should continue until it is no longer safe to do so or until such interference disturbs the chimpanzee. The chimpanzee should be left in lateral recumbency with head and neck extended and the tongue protruding from the mouth if possible. This should allow any saliva to drain from the mouth. Protect the eyes from direct sunlight. Be aware of potential hazards (water, falling from heights etc) to the chimpanzees in its immediate environment - most chimpanzees will stagger somewhat as they attempt to move away following awakening. Do not feed or provide water until recovery is complete and the chimpanzee can walk without ataxia.

ANAESTHETIC AGENTS AND DOSE RATES FOR CHIMPANZEES

<u>DRUG</u>	<u>INDICATION</u>	<u>DOSE RATE</u>
Atipamezole (“Antisedan”)	Reversal of medetomidine in chimpanzees	Total dose = 3-5x the total dose of med. Given. Usually IM, can be split ½ IM. + ½ IV in emergency.
Ketamine	Short-acting anaesthetic	10mg/kg, IM Atropine inhibits salivation.
Zoletil/Telazol	Anaesthesia dose-dependant Agent of choice or escaped chimpanzees or for very aggressive chimpanzees. NB “Zoletil” can be made up at <500mg/ml.	2 – 5mg/kg IM
<u>Mixtures</u>		
Zoletil + Medetomidine		2 – 2.5 mg/kg IM 15-20ug/kg IM
Ketamine + diazepam	Anaesthesia with improved muscle relaxation & duration.	10mg/kg ketamine + 1mg/kg diazepam. Give IM
Ketamine + xylazine	Anaesthesia with improved muscle relaxation & duration. Partially reversible with atipamezole	10mg/kg ketamine + 1mg/kg xylazine. Give IM
Medetomidine + ketamine (med = “Domitor”)	Reversible anaesthesia.	30-50ug/kg med.+ 3-4 mg/kg ket. Give IM
<i>Oral</i>		
Medetomidine	for minor procedure	75-100ug/kg
Diazepam	pre med	1-1.5mg/kg PO
Flunitrazepam	pre med	0.1mg/kg PO

NB: The latter two drugs can be used up to 1 hour before the anaesthetic. The dose of medetomidine and ketamine is approximately halved.

APPENDIX 7: COMPLICATIONS AND RESUSCITATION TECHNIQUES

Introduction - The vital signs of life

A practical knowledge of a chimpanzee's **vital signs** and the physiological processes giving rise to them is essential. In simple terms, vital signs are the clinical indicators of the existence and stability of life. Every opportunity should be taken with healthy chimpanzees to observe such signs.

Life in all cells of the body depends on a good supply of oxygen and nutrients so that cellular metabolism can be fuelled. The waste products of this metabolism must be removed from the cells' immediate environment to avoid them being poisoned. Cellular metabolism, which is basically a series of highly complex chemical reactions, can only occur within a limited temperature range.

The circulatory or cardiovascular system (the heart, blood vessels and the blood flowing through them) provides the means by which oxygen and nutrients can be distributed to every cell in the body and the waste products, such as carbon dioxide (CO₂) and lactic acid, removed. It is only in the extensive network of tiny capillaries that this delivery and removal service occurs, therefore **normal function in the capillary network is vital for the life of any tissue.**

Breathing (respiration in its narrowest sense) is the mechanism by which oxygen is taken into the lung and delivered to the red blood cells in the lungs' capillaries for distribution throughout the body. Simultaneously waste CO₂ is released from the blood and voided as the chimpanzees breathes out.

A chimpanzee's vital signs provide information about the functional state of the cardiovascular and respiratory systems, thereby revealing the condition of the crucial life support mechanisms. If any component of these systems is compromised, life itself is at risk.

The vital signs of life include:

- Heart rate
- Pulse rate and strength
- Quality, rate, and gross sounds of breathing
- Mucous membranes colour
- Capillary refill time (2-3 seconds is normal)
- Core body temperature
- Volume and specific gravity of urine

The most significant life-threatening anaesthetic complications that are likely to be met are hyperthermia, respiratory failure, and/or circulatory failure (including shock).

Given that few serious emergencies are sudden in onset, **monitoring of a patient's vital signs is the key to appropriate action during an anaesthetic.** The same applies for a collapsed chimpanzee. Most monitoring procedures are directed towards assessing the oxygen carrying ability of the blood and the effectiveness of the circulatory system in carrying this blood to and from the tissues. Carried out correctly and with sufficient frequency, appropriate monitoring will allow you to avoid a number of deaths.

Resuscitation is not generally about dramatic rescues - prevention is always better than cure. In all anaesthetic emergency situations demanding resuscitation the actions required should follow a disciplined pattern or **ABCD** approach. Further comment will be made on this below. Once faced with complete respiratory and circulatory failure (cardiopulmonary failure) restoring life is exceedingly difficult.

Respiratory failure

Respiratory failure (lack of, or ineffective breathing) can occur during anaesthesia or in any severely injured, shocked or diseased chimpanzees at any time, especially in cases of severe respiratory infections. During anaesthesia respiratory failure is often caused by the administration of too much anaesthetic agent. It can also be caused by obstruction of the airway, or even by severe pain.

The monitoring of respiration is achieved by observing the depth and rate of breathing, by checking the colour of the mucous membranes and by ensuring that no obstructions develop within the oral cavity or pharynx. Signs of impending respiratory failure include a fall in the rate of breathing to less than 50% of normal, a progressive fall in the depth of breathing, and pallor or a blue appearance of the mucous membranes. Obstruction of the airway in unanaesthetised chimpanzees may be indicated by violent and frequent attempts by the chimpanzees to draw in breath. During profound anaesthesia, obstruction can cause inadequate ventilation without the dramatic inspiratory attempts.

As a rough "rule of thumb" complete respiratory failure in an adult chimpanzees may be considered as having occurred if there is a lack of breathing for 1 minute, with continued beating of the heart. On diagnosing this condition the following action should be taken (following an **ABCD** code):

A: Airway: Check that the passage of air into the lung is unobstructed.

An endotracheal tube of the correct size should be available at all times. Remove any vomit, mucous, blood clots or foreign bodies from the mouth. If an endotracheal tube has been fitted, check that it is not blocked or kinked. If no endotracheal tube is in place extend the head and neck and pull the tongue forward. (The tongue may be lodged against the back of the pharynx,

obstructing the larynx or entrance to the trachea). before passing an endotracheal tube and inflating the cuff to safeguard the airway. Check to make sure the tube is in the trachea not the oesophagus.

B: **Breathing:** **Establish and then maintain breathing.**

Establish an effective pattern of breathing. This is best done forcibly using an anaesthetic circuit and "positive pressure ventilation" with oxygen or an ambubag. However, blowing intermittently through an endotracheal tube positioned in the trachea can be extremely effective. (In extreme circumstances where no endotracheal tube is fitted, breathing can be established by blowing intermittently with your mouth placed around a chimpanzee's nostrils whilst keeping its' mouth closed.)

(The possibility of zoonotic disease should be considered before embarking on this course!) Whichever method is chosen, one respiratory movement should be established every 3-5 seconds.

Intermittent pressure on the chest wall can be used to establish an airflow in and out of the lungs but is extremely inefficient for anything more than a couple of minutes.

C: **Circulation**

Respiratory and circulatory failure often occur together and therefore it is essential to ensure that the chimpanzee's heart is still beating and that an effective pulse is present.

D: **Drugs**

The supply of gaseous anaesthetic agents should be discontinued and where reversible anaesthetic agents have been used the antidote should be administered. (The consequences of recovery to consciousness must be considered - especially where a chimpanzee is undergoing an operation).

Give atropine at 0.05mg/kg to dilate bronchioles and stabilise the heart rate.

The most useful specific respiratory stimulant drug is doxapram ("Dopram-V" Willows Francis), although its effect may be short lived. Give initially intravenously at 1 - 2mg/kg. Prior to finding a vein, drops of an oral form of "Dopram-V" can be given under the tongue.

If breathing is re-established and stabilised an anaesthetic can be continued, but monitor the chimpanzees closely and try to lighten the anaesthesia. In the case of a collapsed chimpanzee, if the respiration is restored, the cause will have to be

identified and addressed. In either event close monitoring will be required for a prolonged period following the failure.

Cardiovascular or circulatory failure

Failure of the circulation can occur in many circumstances, but is seen particularly in severely shocked chimpanzees or those undergoing anaesthesia. It is important to realise that most anaesthetic agents have a depressant effect on cardiovascular function and anaesthetic overdoses are the commonest cause of cardiac failure during anaesthesia.

The early diagnosis and treatment of cardiovascular failure is complex. For the sake of clarity and practicality only a simplified account will be given here.

1. Heart failure

"Heart failure" simply means no effective output from the heart. Therefore the term includes not only complete absence of a heart beat (cardiac arrest), but also uncoordinated beating of different parts of the heart (such as ventricular fibrillation) and inefficient heart beats caused by (egg) fluid overload.

Signs: Absence of previously palpable pulse.

Rapid cyanosis (blue coloration) or pallor of mucous membranes.

No heart sound (use stethoscope).

These signs are rapidly followed by wide dilatation of pupils, and cessation of breathing or agonal gasping.

Action:

- 1) Look at watch, set stopwatch. Brain cells are particularly at risk from hypoxia and irreversible brain damage is likely unless cerebral circulation is restored within 3 minutes.
- 2) **Airway** - check as above.
- 3) **Breathing** - Establish and maintain breathing,
- Provide oxygen if possible.
- 4) **Circulation** - Apply external cardiac massage.
i.e.: Intermittent pressure on chest wall over heart - 1 per second. Place head down to assist blood flow to the crucial organ - the brain.

- 5) **Drugs** - Turn off or reverse reversible anaesthetics.

If cardiac arrest: **Adrenaline**:- 0.01mg/kg i.v. every 3-4 minutes.
(i.e. 1ml of 1/10,000 adrenaline per 10 kgs)

Atropine:- 0.05mg/kg i.v.

If vent. fibrillation: **Lignocaine**:- 1-2 mg/kg i.v.

- 6) If cardiac function restored, consider giving iv fluid to correct hypovolaemia and monitor very closely. Cerebral oedema often follows circulatory failure - give 1mg/kg methyl-prednisolone every 6 hours x 4, plus diuretics.

NB: The restoration of effective cardiovascular function after cardiac failure is difficult, and prevention is infinitely better than attempting a cure. A common situation during anaesthesia where too much anaesthetic has been given is the weakening of pulse strength and slowing of the heart. The timely administration of subcutaneous or very slow intravenous atropine at this point can restore both and prevent heart failure developing.

2. Shock

“Shock” is failure of the microcirculation (basically the capillary network) to provide adequate perfusion of the tissues with blood. Thus cells are deprived of oxygen and nutrients, and waste products are not removed. Local cellular death will eventually occur, followed by death of the chimpanzees. Various categories of shock can be recognised, but of most practical importance is hypovolaemic shock ("low volume shock") - due to loss of blood, plasma, or just water and electrolytes. This can be caused for example by haemorrhage, severe and prolonged diarrhoea or vomiting, or simply the inability to drink whilst injured. Whatever the cause, the main effect is insufficient liquid in the blood vessels to keep capillaries open and functioning.

Chimpanzees suffering from lesser degrees of fluid or blood loss may not actually be in shock as various adjustments in the body's fluid distribution will have been made to compensate for these losses, hence maintaining the microcirculation. However, they are heading towards shock and such losses should be replaced. i.e. best way to deal with shock is to prevent it occurring.

Signs: Weak and rapid pulse, pale or cyanotic mucous membranes, rapid heartbeat, hyperventilation and mental depression.

Action: If delay in treating shock is too long, damage to cells is irreversible.

- 1) Correct any obvious cause - anaesthetic off or reversed, stop haemorrhage.

- 2) Give intravenous fluids rapidly.
Give 40ml/kg of crystalloid solution such as lactated Ringers solution.

Hypertonic saline (7 - 7.5% sodium chloride) can be given as an alternative. 5mls/kg.

If dehydration is severe, <100mls/kg can be given.

- 3) Give broad spectrum antibiotics and high dose corticosteroids.
(egg: dexamethasone at <5mg/kg i.v.)
- 4) Provide oxygen if available
- 5) Monitor vital signs very closely.
Especially capillary refill time and pulse rate and quality.
Always remember **A,B,C,D** approach.

Hyperthermia

Untreated, hyperthermia can lead to brain damage and death from pulmonary oedema. Even in less extreme cases a prolonged recovery from anaesthesia can be expected.

Mild cases: Externally applied water and increased air cooling.

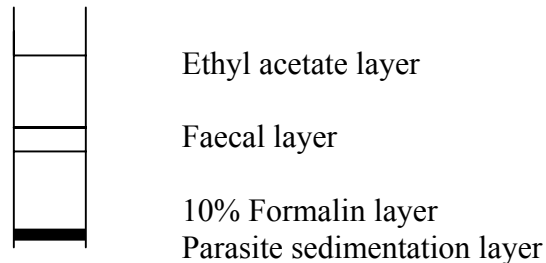
Severe cases: Cold water immersion, cold water enemas, iv fluids and corticosteroids plus antibiotics. The most effective simple way to correct hypothermia is by cold water enema

Appendix 8
CONCENTRATION TECHNIQUE FOR PARASITE
PRESERVATION/ANALYSIS

- (1) Place 1 gram of faeces into a glass tube with 4 mls of 10% formalin. Mix/stir thoroughly. Add an additional 4mls of formalin to the suspension.
- (2) Strain the above through a sieve (coarse strainer) to remove large plant particular debris.

Stop at this point if no centrifuge or analysis is available.

- (3) Take the suspension and add 8 mls of ethyl acetate and mix for 1 minute.
- (4) Centrifuge at 3000 rpm for 1 minute. The parasites will then be at the bottom of the tube.



- (5) Invert the tube to decant both layers of fluid and faecal debris. Mix the sediment with a minimum remainder of the fluid to suspend.
- (6) Place a small amount of the sediment suspension on a glass slide and cover slip and read.

All parasites including: protozoa, ova of helminths, and vivipara (L1 larvae) can be analysed using this method. Protozoal cysts are more easily identified if a drop of iodine is added to the glass slide.

Appendix: INTRADERMAL TUBERCULOSIS TEST METHOD AND ITS INTERPRETATION

1) Test: 0.1ml "Old Tuberculin" (Mammalian, human isolates) injected **INTRADERMALLY** into upper eyelid using a 27g needle. "Old Tuberculin" is produced by Coopers Chimpanzees Health Inc. *The batch number & expiry date of the tuberculin should always be recorded.*

2) Observations made at 24, 48 and 72hrs:

These observations mostly relate to macaques

Code for recording :

-	=	no reaction
+/-	=	slight
+	=	moderate
++	=	marked
E	=	erythema
FS	=	focal swelling/induration at injection site.
GS	=	generalised swelling of eyelid.
N	=	necrosis

3) Interpretation:

Based on standard procedure developed by Richter et al, 1984.

Richter, C.B., Lehner, N.D.M. & Henrickson, R.V. (1984)
pp 297 - 313 in "Laboratory Chimpanzees Medicine",
Fox, J.G., Cohen, B.J. & Loew, F.M. (eds).
Academic Press Inc, London. (ISBN 0-12-263620-1)

Reaction at 72hrs	Grade	Interpretation
No reaction observed.	0	Negative
Bruise only.	1	Negative
Erythema without swelling.	2	Negative
Erythema with minimal swelling, or slight swelling without erythema.	3	Suspicious
Obvious swelling with drooping of eyelid and erythema.	4	Positive
Swelling +/- or necrosis with eyelids closed.	5	Positive

Appendix 9: INTRADERMAL TUBERCULOSIS TEST METHOD AND ITS INTERPRETATION. (Continued)

4) Further comments on interpretation: (adapted from Martin, 1986)

A negative reaction may indicate that no disease is present or that the disease has progressed to such an advanced state that the chimpanzees has become anergic.

A viral infection such as measles, a debilitating illness, corticosteroids, or immunizations may all depress sensitivity to the test.

When retesting chimpanzees with questionable reaction observations should be made between 2 and 8 hours after the test is performed as well as daily, since chimpanzees that are anergic may demonstrate a "flash" reaction, which quickly recedes.

Vaccinations - intervals dictated by vaccine type.

Appendix 10 : NECROPSY PROTOCOL.

Introduction

All chimpanzees that die should be necropsied as soon after death as possible to establish the cause of death and to generate reference material for later study. It is vital that infectious diseases are recognised promptly and appropriate action taken to safeguard any in-contact chimpanzees.

Although qualified and experienced veterinary pathologists are unlikely to be available, many tissues can be preserved for examination at a later date. It may be possible to call on the services of local doctors or State veterinary surgeons to assist in the necropsy procedure and to recognise possible lesions for further investigation. Even if this is not possible, any necropsy is better than none.

Where at all possible, it is helpful to photograph possible lesions for later discussion with myself or appropriate others. A video recording of any necropsy would be even better. Photographs and videos can be mailed to myself for interpretation if necessary.

Storage of the body prior to necropsy

The necropsy should be performed as soon after death as possible thereby minimising the adverse effects of tissue degeneration (autolysis) and bacterial decomposition.

Store the body refrigerated at 4oC until necropsy where this can be performed within 72hrs of death. If a fridge is not available keep the body as cool as possible. Do not freeze as ice formation within tissues considerably reduces the value of subsequent histological examination.

When it is not possible to carry out a necropsy within 72hrs, the body should be frozen to arrest decomposition. Although histological examination then becomes difficult, at least gross lesions will still be identifiable once the body is thawed. In many cases bacterial cultures of tissue samples will still have value. Once thoroughly frozen at -20oC or below, the body will be preserved for many months. Thawing may take longer than one might expect - allow at least 1 day for a adult female and up to 2 days for an adult male. Carrying out a necropsy on a frozen and thawed body is far from ideal and all attempts should be made to perform the necropsy before freezing is necessary.

Personal protection

All personnel involved in the necropsy of a chimpanzee should be protected from contamination with infectious material. This requires that gloves and suitable items of protective clothing are worn. Disposable latex gloves and plastic coveralls are useful in this regard. Waterproof (and hence washable) footwear should be worn.

The necropsy should be carried out in an area well away from live chimpanzees facilities and one which can be thoroughly cleaned and disinfected afterwards. Stainless steel trays to limit the spread of bodily fluids from the body during necropsy are very useful.

Personnel should not eat, drink or smoke whilst carrying out a necropsy, nor should anyone else present in the area.

Once the chimpanzee has been examined and all tissue samples taken, the remainder should be incinerated to destroy pathogens. When skeletal elements are required a safe method of removing and disposing of the soft tissues must be devised.

Necropsy worksheet

A comprehensive necropsy worksheet follows which should provide a structure for post mortem examinations. As much of the worksheet should be completed as possible.

The worksheet is an amended version of a general necropsy protocol developed by Dr Linda Munson et al, following the 1992 IUCN Captive Breeding Specialist Group "International Conference on Implications of Infectious Diseases for Captive Propagation and Reintroduction Programs of Threatened Species".

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Needed CLINICAL DATA, MILESTONES, FORMULARY, GA CHARTS

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 10

Appendices

C: Behavioural Management

APPENDIX : BEHAVIOURAL MANAGEMENT

Working Group Participants:

Josephine Afema

Carol Keys

Sarah Marshall

Joseph Mayo

Cherie Montgomery (Monty)

Chris Mitchell

Estelle Raballand

Sam Ubi

Ashley Vosper

Richard Wrangham

BEHAVIOUR

Introduction

- A. Group size/Composition
 - wild
 - captive
 - group size
- C. Abnormal Behaviour
 - wild
 - captive
 - solutions
 - traumatized chimpanzees
- D. Reproduction
 - reproduction
 - methods of birth control
- E. Integration
 - Preparation to integration

CARE

Introduction

- A. Caregiver/chimp relationship
- B. Training
 - a. Conditioning
 - b. Social learning
- C. Collection of observational information
- D. Environmental enrichment
- E. Hand-rearing
- F. Feeding Behaviour

BEHAVIOUR

a. INTRODUCTION

The natural, species-typical behaviours of chimpanzees in the wild can be considered as the means by which they survive in their native environment. In a captive environment, behaviour, to a large extent, can be considered as a reflection of how well the psych-social needs of the chimpanzee are being met. It is virtually impossible to duplicate in a captive environment every detail of the conditions in the wild. Not only is this not physically possible, the necessary depth of information has not yet been gathered to provide an adequate understanding of these complex wild ecosystems. Therefore the full behaviourally repertoire that is found in the wild chimpanzee will most likely not be found in a captive situation.

A balance between the diverse and complex aspects of maintaining chimpanzees in captivity (such as group size/composition, exhibit design, financial resources, public education, etc.) is a solid beginning to having chimpanzees in captivity behaving as close to wild chimpanzees as is possible. Behaviour that is far removed from that which is considered to be species-typical is a strong indication that some aspect of the individual's or group's psycho-social needs is not being adequately met.

Chimpanzees live in highly fluid, fission/fusion societies made up of shifting associations among individuals within a relatively stable unit-group (Nishida, 1968) or community (Goodall, 1973), and whose members share a common home range. Community sizes can range from 20 to 100 individuals of all age classes, with some field studies indicating an equal distribution in both sex classes and others reporting that females often outnumber males (Nishida & Hiraiwa-Hasegawa, 1987). The community constitutes a relatively closed social network within which the fluid associations of individuals takes place.

Below the level of the community, individuals come together to form temporary parties or bands. A party may stay together for a few minutes or several days. The most stable, long-lasting party is a mother and her dependent offspring (Goodall, 1986; Nishida & Hiraiwa-Hasegawa, 1987). Most parties are small, containing 6 or fewer individuals (Goodall 1968, 1986; Reynolds & Reynolds, 1965; Nishida 1968). Kortlandt (1962), observing chimpanzees at the border of forest and plantation in Zaire, described 2 types of social groups: 1) sexual groups made up of mostly adult males and females without dependents, and a few females with young; and 2) nursery groups of females and dependent offspring. Reynolds & Reynolds (1965) in Uganda recognise 4 types of parties: 1) bi-sexual adult parties, 2) all-male parties, 3) mother parties, occasionally with childless females, and 4) mixed parties, combinations of all-male and mother parties. Goodall (1986) described 8 types of parties: 1) all male parties of adult and/or adolescent males, 2) a family unit made up of a mother and dependent offspring that may also include older offspring, 3) nursery-units, groups of family units that may include unrelated, childless females 4) mixed parties of adult and/or adolescent males and females, 5) sexual parties, a mixed party with one or more females in estrus, 6) consortship – exclusive relationships between an adult male and an adult female, 7) gathering – a large

group containing at least one half of the community and one half of the adult males, and 8) lone individual – single chimpanzee.

Membership in the various parties is constantly changing, with individuals of either sex free to change associations at will. Adults and adolescents forage, travel and sleep according to their own criteria, and are not rigidly controlled by dominant individuals. Males are more sociable than females, as evidenced by the higher probability of finding males together and the higher frequency of grooming between males as compared to the probability of finding females together or the frequency of grooming between females (Nishida, 1968, 1979; Wrangham & Smuts, 1980). This highly fluid society provides chimpanzees with a greater variety of social interactions than most other primates experience (Goodall, 1986).

Even though the pattern of individual associations is very plastic, dominance hierarchies do exist and dominant individuals may affect the movements of small groups. However, larger groups or all-male groups do not have easily identifiable leaders (Goodall, 1968). Strict linear hierarchy may not exist for groups of 10 or more (Nishida & Haraiwa-Hasegawa, 1987). Instead the hierarchy is headed by an Alpha male followed by a group of co-dominant males, and this group is followed by another, lower ranking group of co-dominants (Tuttle, 1986). Male chimpanzees seem very tolerant of each other as is evidenced by the amount of time they spend grooming each other, and by the frequency with which they share meat, both a rarity among females (Teleki, 1973). Co-operation among males in hunting and in defense against conspecifics and heterospecifics also illustrates the tolerance of males for each other, and their social cohesiveness (Bygott, 1979; Goodall 1968, 1971; Nishida, 1981, 1983; Riss & Goodall, 1977).

Females are less sociable than males and show little mutual attraction for each other (Nishida, 1979). Wrangham (1979) suggested that females had little impact on the social network of the chimpanzee community based on his observations of the movement patterns of males and females. He presented a model in which females and their offspring are restricted to sub-sections of the community territory and males range widely among the smaller female territories. In this way the females are relatively isolated from each other and only come into contact when their territories overlap. Kawanaka (1984), however, provides evidence that females move over the entire community range and number of authors report affinity among females indicating that a female social network exists (Ghighlieri, 1984; Goodall, 1986; Tuttle, 1986). Wrangham (1987), based on more recent observations of females moving throughout the community range and preferences for associations which females from their own community, has also concluded that while females may be less sociable than males, they are part of the bisexual community for chimpanzees.

Encounters between two communities can result in extreme aggression (Goodall, 1986; Goodall et al, 1979; Nishida et al, 1985). The fission of the community at Gombe resulted in severe aggression between the old and the new communities, with several members of the new community being killed and the new community eventually being dissolved (Goodall, 1986). A similar observation comes from Mahale (Nishida et al,

1985) where 2 adult males were thought to have been killed by males from a rival community.

One type of encounter between members of different communities does not usually lead to aggression. Males patrol the borders of their community's home range (Bygott, 1979; Goodall et al, 1979) and occasionally encounter estrous females from neighboring communities. These females may be in the process of transferring from one community to the other and are not usually met with aggression (Nishida & Hiraiwa-Hasegawa, 1987). While nulliparous females can move relatively freely among communities and are readily accepted by males, resident females may be aggressive towards the new females. Anestrous females with young are likely to encounter severe aggression from males (Goodall, 1986) which sometimes results in the death of infants (Goodall, 1977; Nishida & Hiraiwa-Hasegawa, 1987).

The behavioural flexibility of chimpanzees makes it difficult to classify a single behaviour as species-typical or one that is engaged in by every chimpanzee. The degree to which behaviour varies from community to community and even from individual to individual illustrates the wide variety of behaviours that characterise chimpanzees. This behavioural flexibility is evident in "cultural" differences among chimpanzee groups in different parts of their range. For example, chimpanzees all across their range use tools but the chimpanzees of Gombe regularly use tools to "fish" for termites while those at the Mahale Mountains fish for ants instead. This may be due to the fact that the Mahale termites are a different genus (*Odontotermes*) than those at Gombe (*Macrotermes*) and may have a more distasteful defense secretion, allowing fishing to develop in one group and not in another (Nishida, 1987). Chimpanzees also use rocks as anvils and hammers to crack nuts, but chimpanzees in Bossou use these tools to crack palm nuts, but chimpanzees in the Tai Forest, which also contains palm nuts, do not (Boesch & Boesch, 1981; Sugiyama & Koman, 1979; Goodall 1986). The chimpanzees of Mt Asirik, in Senegal, prey on a nocturnal primate but show no interest in the *Cercopithecus* monkeys or ungulates that are favourite prey items for eastern chimpanzees (Nishida, 1987). While the general behaviours of fishing, hammer and anvil use, or hunting may be fairly ubiquitous, the details, or specific expressions of these behaviours shows a wide degree of flexibility, i.e., "cultural traditions". The expression of these behaviours is highly dependent on environment features, e.g., the presence or absence of palm nuts, and social transmission of the techniques.

b. GROUP SIZE/COMPOSITION

Wild

The size of wild chimpanzee communities is directly tied to habitat features such as forest density or forest type, and food availability and density. Caution must be taken, however, in using rather broad classifications of habitat type. In lowland forest blocks of Uganda, estimates for population densities range from a low of 0.4 chimpanzees per square kilometre to a high of 4.0 chimpanzees per square kilometre (or hectares) (Teleki, 1989). Uganda's population densities appear to be unique, as the general rule of thumb, arrived at from estimates of population densities from kilometre for closed canopy rainforest (Teleki, 1989). The differences in population estimates may be the result of field estimation techniques and/or a lack of appreciation of the differences between individual habitats generally classified as lowland rainforest.

In contrast, the Ugalla area in the northeast region of western Tanzania is an arid habitat and has been found to support an average of 0.07 – 0.08 chimpanzees per square kilometre (Itani, 1979). The existence of chimpanzees in this type habitat is testament to the high degree of adaptability of this species. Mosaic habitats consisting of a mixture of grassland, woodland, and deciduous forest is generally considered to support 0.2 chimpanzees per square kilometre (Teleki, 1989).

In general, the number of males and females in a community is fairly even. However, the sex ratio may vary among communities or even within a community over years (Nishida, 1979; Tutin & Maginnis, 1981). Nishida (1979) reports that for the 6 communities in the Mahale research area, the ratio of males to females was 1:1.0-3.5 showing a larger number of females than males. The interactions among males differs significantly from those among females. There are significantly higher frequencies of affiliative relationships among males than among females (Nishida & Hiraiwa-Hasegawa, 1987; White & Wrangham, 1988). A dominance hierarchy and its attendant social dynamics is most evident among the males of a group. Males spend a great deal of time together, whether in feeding, patrolling, resting or in social grooming. Nishida (1979) reports that for a 4 month period the frequency of grooming among 5 adult males was 218 as compared to 49 grooming interactions among 10 adult or sub-adult females for the same period. Therefore, grooming is evidence of a stronger affiliations among males than among females.

Females spend the majority of their time in small groups consisting of an adult female and her dependent offspring. They generally feed along unless particularly rich food patch, e.g., large fruit tree, attracts most of the community to a single place. Female chimpanzees emigrate from their natal group, providing the means by which genetic diversity is maintained. Transfer usually occurs during adolescence but has been observed to occur even in adult females. There have even been occurrences of females switching back and forth between communities several times (Nishida & Hiraiwa-Hasegawa, 1987; Goodall et al, 1979).

Captivity

It is important to maintain a certain level of flexibility when making comparisons between the wild and captivity. Most of the information presented on wild chimpanzees will be on the level of the community, i.e., 20-100 individuals. For captive environments, in some instances, it may be most appropriate to consider the entire captive population as a single community in making comparisons to the wild.

The opportunities to form, break up and reform parties of various sizes and compositions, a fundamental characteristic of the chimpanzee's fission/fusion social structure, and the opportunities to express behaviours closely/associated with those various parties, are reduced when the numbers of individual chimpanzees in the various age/sex classes is reduced.

One behaviour in which these appear to be a significant departure from that observed in the wild is social grooming. Captive females seem to have many more affiliative interactions than wild females. Grooming between females, infrequent in the wild, is observed frequently in captivity (see group size/composition/behaviour survey result for specific data).

A number of variables may be influencing this difference in behaviour such as food distribution, total available space, etc., but it again demonstrates the high degree of behavioural flexibility of chimpanzees and supports the need for further research to fully understand the species in order to provide optimal care.

In captivity, as in the wild, a dominant individual (male or female) will emerge for each captive group. In some cases a co-domination between 2 individuals may occur instead.

Group Size

Chimpanzees in their natural environment live in social groups therefore sanctuaries should aim to manage these species in a group setting. Factors limiting chimpanzee group size include:

1. Practical/financial limitations of the sanctuary such as:
 - number and size of enclosures available
 - management of group size will be influenced by staffing levels
 - feeding methods will also influence the group size XXX as to ensure all chimpanzees receive adequate nutrition
 -
2. Chimpanzee behavioural and social characteristics such as:
 - a. personality of the individual chimps in the group will effect group cohesion and thus limit the ultimate size of the community
 - b. The sex ratio of the sanctuary group will affect the group size

- c. A large group size may increase the chances of a fission within the chimpanzee community which could result in severe aggression between the two subgroups.
- d. Given optimal conditions (i.e. sex ratio and personality) previous experience tentatively indicates an adequate number may be in the order of 20 individuals per group.
- e. It is suggested that multi-male groups being a completely unnatural situation are only established as an extreme last resort

C. ABNORMAL BEHAVIOUR

Wild

Clearly classifying any behaviour of wild chimpanzees as abnormal is difficult given the incredible diversity of behaviour both within and among communities. The freedom that a wild chimpanzee has to seek out the types of stimuli that will most satisfy its needs, precludes the types of behaviours usually considered as abnormal for captive chimpanzees.

There are, however, instances in which behaviour of an individual is significantly different from others of similar age and sex class. Goodall et al (1979) reports that an adult female who had visible estrous swellings, refused sexual contact with any of the males of her community. Additionally this females behaviour was more consistent with that of an adult male. She frequently participated in boundary patrols with the adult males.

Goodall (1986) also reports an adult female and her daughter who, as a team, were observed on three occasions to attack a community female with offspring, tearing the infant away from its mother and subsequently killing and eating the infant. Some males have been observed spending most of their time isolate from social contact. Juveniles and infants have become severely express ad died following the death of their mother. None of these examples, however, falls into the types of behavioural categories associated with abnormal or stereotypical behaviour seen in captive chimpanzees. The behavioural flexibility of Pan troglodytes cannot be over-emphasised and it can be very difficult to separate cultural differences from individual eccentricities from abnormal behaviour when viewed from the species level for wild chimpanzees.

Captivity

The captive environment has historically presented a very different picture from that of the wild. Social isolation at critical stages of development or in fact during the entire lifespan, has resulted in behaviours ranging from asociality to self mutilation.

Mason (1986) postulates two major functional systems associated with the socialisation/development process. One if Filial or mother-directed the other is Exploitative or other-directed. Behaviours that are mother-directed, such as clinging or

suckling, meet survival needs and also serve to reduce arousal under times of high psychological stress. As the infant ages, he/she tends to reduce interactions with his/her mother and seek interactions with other individuals and objects in the environment. These other-directed behaviours usually serve to increase arousal and tend to occur under conditions of low or moderate stress (Mason, 1986) and become dominant in adolescence and adulthood. An environment without a mother or an appropriate surrogate makes mother-directed behaviour impossible. Lack of appropriate mother-directed behaviour during certain stages of development can inhibit the normal development of social skills and psychological sufficiency and even retard the normal development of both the cerebellum and the cerebral cortex resulting in permanent deficits (Fritz & Fritz, 1985). Lack of social contact and environmental complexity in later stages will also interfere with other-directed behaviours and retard or alter normal behavioural development.

Lack of appropriate environmental stimuli can alter exploitative behaviours and an individual may seek to rise his/her arousal in other way. This stimulation-seeking may be expressed as pacing, rocking or self mutilation. It appears that these two stimulation systems exist in one form or another even in the absence of “normal” types of stimuli and cannot be completely suppressed. Therefore, behaviour associated with these systems will either be “normal” in response to the interaction with appropriate stimuli or abnormal in response to a lack of appropriate stimuli with which to interact. Certainly, the development of individuals differ but, if pacing, head banging or self mutilation can be viewed, as the result of stimulation deficit. This argument serves to reinforce the need for mother-rearing, appropriate social groupings and appropriate environmental enrichment to promote normal social, behavioural, and psychological development.

Solutions

In sanctuaries captive condition improvement helps in lots of cases. Also enrichment and social interactions with humans or chimps has been proven to be an efficient tool. Overall patience towards a chimpanzee is the key to resolving any abnormal behaviour.

TRAUMATISED CHIMPANZEES

Psycho

- ◆ Immediate attention
- ◆ Assess the situation
- ◆ Look for abnormal behaviour
- ◆ Depending on the chimp and his/her past, assess his/her needs, (i.e., contact with human or chimps or isolation required)
- ◆ Depending on the chimp, chimpanzees under 2 years of age, require intense physical contact with humans or chimps (independent of age of sex of the “surrogate mother”)
- ◆ Be prepared for 24 hour care (depending on chimpanzee, age and psychological state)
- ◆ Security blanket, toys, mats... are good tools for reassurance
- ◆ Find out as much as possible about their history

- ◆ Be patient
- ◆ Be aware of individual personalities and needs

Physical

- ◆ Immediate attention
- ◆ Assess the condition of the new chimpanzee before any measures are taken (check list)
- ◆ Prioritise their treatment needed
- ◆ Take into consideration the psychological state of the chimpanzee
- ◆ In severe cases (e.g., severe dehydration), 24 hour care could be required
- ◆ Caregiver and manager have to be involved in the process
- ◆ The chimpanzee should be kept in a comforting, clean and secure environment
- ◆ Depending on the chimpanzee, caution should be taken with infants regarding milk feeding (start with oral rehydration salts first then move towards an infant milk formula gradually)
- ◆ DO NOT OVER FEED NEW ARRIVALS

Conclusion

Most of the new chimpanzees coming to your sanctuary will be traumatised on arrival (physically and/or psychologically). In most cases, the newly arrived chimpanzee will, after a period of proper care, improve dramatically.

REPRODUCTION

Depending on your facility, your agenda and the groups dynamics, reproduction of the females can be controlled or not.

An intermediary way is to allow partial reproduction. This can be of certain females or over a time period.

It is important for sanctuaries in counties with an orphan chimp problem, that the sanctuary takes this into account when considering the issue of reproduction.

The sanctuary also needs to carefully consider the birth control method (if chosen). This is so that future options are not compromised.

REPRODUCTION: YES OR NO?

PRO	CON
Diverse gene pool Diverse culture Observation of maternal behavior Social implications Preparation for release Increase population Ethics Birth control –side effects?	Limited capacity: <ul style="list-style-type: none"> • Space • Time • Cost Genetic mixing Research opportunity Introduction of orphans Ethics Preparation for release Birth control –side effects?

BIRTH CONTROL METHODS – MALE

Castration

- Obsolete
- Social Abnormalities
- Smaller (release issues)

Vasectomy

PRO	CON
Non-reversible No behavioral change	Non-reversible

Reversible Vasectomy

PRO	CON
Reversible	Unreliable

Separation

PRO	CON
Inexpensive Non-invasive	Management Group dynamics

BIRTH CONTROL METHODS – FEMALE

Sterilisation

- Obsolete

Bilateral tubal ligation

PRO	CON
Reversible Hormones	Anesthesia Invasive (Major Surgery) Expensive Technically Difficult

IUD (Intra-uterine device – Plastic, NOT Copper T)

PRO	CON
“Natural” No Hormones Long-term (up to seven years)	Anesthesia Increased risk of infection Follow-up (X-ray every year) Technically Difficult Risk of removal by female Contraindicated with certain anti-inflammatory drugs

Depo Provera (Injection)

PRO	CON
No more estrus Reversible Effective	Frequency: 1 shot every 3 months) Injection Hormonal Side-effects Expensive

Female Birth Control Pills

PRO	CON
Non-invasive Reversible Efficient if actually swallowed	Difficult to verify Management Hormonal Side-effects

Male Birth Control Pills

PRO	CON
Non-invasive Reversible	Not very effective Management Hormonal Side-effects

Implants

PRO	CON
Reversible Cost-effective Can be stopped at any time to allow breeding Easy to administer	Invasive Anesthesia required Expensive Hormonal

Separation

PRO	CON
Non-invasive Reversible Cost-effective Can be stopped at any time to allow breeding	Affects behavior of group/individuals Group needs to be watched all the time Constantly ongoing

RESOCIALISATION/INTEGRATION

Integration protocols should be flexible enough to allow for individual needs.

It is vitally important to develop a written plan based on experience from other sanctuaries.

Factors to consider when developing your plan include:

- Introduction Schedule:

The timing will depend on each group, each individual and each circumstance, promoting social relationships that protect low-ranking individuals. For example, pairing the individual with a high-ranking male or female for several days or weeks, under supervision, is often an effective strategy.

- Intervention strategy, in the case of severe aggression. Some people use the dart gun (loaded or unloaded), some the water hose, in Guinea the sling shot is used, and sometimes feeding is a good diversion. Be sure you are in an enclosed area where intervention is possible for controlling behavior. Strategies for controlling aggression vary, depending on the age of the individual you are attempting to integrate, and the age and size of the group.
 - Regular monitoring of behaviour
 - Managers' Skills – training for the staff so everyone is prepared.
 - Ensure that the facility size and design are adequate (e.g. doors which allow only youngsters to go through thus creating a safe haven for them during the integration process)
 - Integration is often easier at sundown – they are calmer, they are fed. Often after a night together, aggression can be diminished.
 - when caregivers are used to interacting with the members of the group in the holding facility their presence during the integration process will be helpful
 - Consult widely in order to take advantage of novel strategies regarding separation and integration:

Two sub adult male chimpanzees who needed to be introduced as quickly as possible were moved into a cage that was new to both of them. They were provided with a pile of rocks and a realistic plastic snake. The two individuals immediately formed an alliance toward a common enemy with ensured a successful integration between the two.

- Multiple males:
 - Chimpanzees are capable of intense aggression. Even in the best sanctuaries, deaths or mutilation have occurred among particularly aggressive individuals.

- As a last resort, if it is not possible to increase the size of the sanctuary, separation has been used. Separation should only be considered if it is permanent.
- Multiple females:
 - In most sanctuaries, groups of adult females without males are rare, unless separation is used as a management tool.
- In general, integrations of groups should occur as early as possible in order to avoid inter-group tensions. If a sanctuary has more than one group, separation should be performed by personality (preferred social relationships), not necessarily by age.

Basic introduction steps

Any new chimpanzee being introduced to an existing exhibit should be allowed the time to become familiar with the exhibit area as well as with the other group members prior to the actual physical introduction. In this way, serious injury to the chimpanzees may be avoided. If facilities allow, introductions should be conducted in an area that is unfamiliar to all the chimpanzees involved, possibly lessening the problems associated with territoriality. The use of various enrichment items, e.g., browse and scattered food, may help to dissipate aggression by keeping the chimpanzees occupied. Feeding the chimpanzees prior to the introduction may help them to be more relaxed. Regardless of the age group of the introduction or whether the event will take place indoors or outdoors, the following three steps should be attempted:

1. Allow the new chimpanzee time to explore and become familiar with any new area in the absence of other conspecifics.
2. Allow individuals one on one visual access to each other. Depending on the design of the holding this may be accomplished in a number of ways (i.e., through plexi-glass, a nearby holding area or possibly even mirrors). Because the chimpanzees do not have actual contact, it may not be possible to determine how they might react to each other.
3. Allow the chimpanzee tactile access in a manner that allows touching and smelling, but not the ability to grab or bite. A heavy wire mesh with small openings works well and can be installed between two adjacent holding areas. At this point it may be possible to tell if there is a dislike between two individuals. If this is the case, then this step should be repeated until it is felt that the chimps are sufficiently comfortable with one another to proceed.
4. Allow the chimpanzee one-on-one physical access to each other. This step may have to be repeated a number of times for increasingly longer periods before you feel that the chimps are ready to be left together. It would be beneficial to do these introductions out of sight of other group members. It is important to remember that aggression from an adult to an infant or juvenile may indicate that the pairing is not appropriate, but a certain amount of aggression must be allowed between two older individuals so that they can

work out any difference they may have. However, these encounters should not end up in serious physical or psychological injury that could set back the entire introduction process. It may be necessary to separate individuals during the introduction process. It is important to remember that the subsequent reunion may result in more aggression, as it sometimes does even with familiar chimpanzees both in the wild and in captivity. Try to minimize the number of separations.

Once the individual chimpanzees have gotten to know each other, it will be possible to start expanding the group. At this point, a lot depends on the exhibits capabilities and the chimps involved. Group formation may be accomplished in a number of ways:

1. By slowly adding individuals to a core group
2. By expanding the one-on-one introduction process to include more individuals
3. By quickly introducing all of the chimps after they have gone through the initial introduction phase. (In some introductions of this type, a mild tranquilizer has been administered to all the chimpanzees in the group in hopes of minimizing aggression. This has been done with mixed results and is not recommended.)

Although what works in one situation may not work in another. There are a few things that should be kept in mind:

Infants

Infant chimpanzees in the wild spend at least 5-6 years in close contact or proximity to their mothers and other siblings. Ideally it is better to allow a captive infant the opportunity to be raised by its own mother as well (if possible). For various reasons, this may not always be possible. It will be equally as crucial, however, for a hand-reared infant to develop a normal repertoire of appropriate social behaviours early on. Socialisation back to the mother should be done within 6 months if she is willing to accept the infant. It will be necessary to train the female to allow an infant of this age to be bottle fed. If a hand-reared infant cannot be reintroduced to its mother and is to be introduced into another group, this should be done as soon as 18 months and not later than 24 months.

It is recommended that these hand-reared infants should not be raised alone but with like aged conspecifics whenever possible. Due to the strong bond that develops among male chimpanzees, infant males raised together should, if possible, remain together to form the core of a breeding group as adults. However, infant pairs that are raised together may not reproduce due to the possible of an “incest taboo” among adult chimpanzees.

Although aggression toward infants is rare among familiar chimpanzees, there have been reported cases of infanticide by dominate females towards the offspring of a familiar subordinate females. There is also the potential threat of infanticide from an unfamiliar adult male. For these reasons, those infants that will be introduced to an unfamiliar group must develop a strong bond with one of the group members who will be able to nurture

its needs as well as protect the youngster from danger if necessary. It is critical to evaluate the appropriateness of pairings with these young infants. Ultimately if there is no individual in the group who responds to the infant's needs and the infant's psychological well-being is at stake, then perhaps the infant should be moved to another group. The initial introduction of these younger chimpanzees should be to a female who has demonstrated a strong propensity for maternal care and in the absence of this, an adult or adolescent female who has shown strong "aunting" instincts toward siblings or other young chimpanzees in the group. Keep in mind, however, that 24 care of an infant or young chimpanzee is an added responsibility not every chimpanzee will be willing to take on. Contact with the keeper will be important to the infant for security but should gradually decrease as the surrogate mother takes over.

The infant should be allowed access to an area where he/she cannot be reached by the adult chimpanzee, letting the infant take his/her time. The process may be slowed down if the infant begins to show signs of stress. Loss of appetite, sudden changes in normal behaviour patterns, excessive temper tantrums, constant loose stools could all be signs that the infant may need to take a rest from the introduction process. Even an infant who has remained energetic and enthusiastic will need an occasional time out to relax.

Juveniles

This is an awkward age for both males and females and special care should be taken when introducing these individuals to keep them from getting themselves into trouble. Under normal rearing conditions, they are still closely associated with their mother and may even still sleep next to her at night. At this age they may be reprimanded not only by their mothers, but siblings as well as other group members, for inappropriate social behaviour. A certain amount of mild aggression (a soft bark accompanied by a head tip or the raising of an arm, or even a quick cuff on the head) from the adults is appropriate and is an important part of the education process that assists these young chimpanzees in understanding the social structure of the chimpanzee society. However, if a juvenile being introduced to an unfamiliar group suffers physical abuse or biting, then this phase of the introduction should be slowed down. These youngsters should be given space to get away from the adults if necessary, and plenty of objects to manipulate and play with.

Adolescence

In the wild, adolescent females may transfer regularly from one community to another. The choice of transfer and the time at which to do it are her choice. In captivity, it may be easier to introduce a young female developing her first sexual swellings may consider her "competition" for the adult male's attentions. It is also important to remember the potential and serious threat from the adult male if this female is carrying an infant when she is introduced. In turn, a young adolescent male who is interested in experimenting sexually with any female who cooperates, may find himself a threat to an adult male as well. This has been demonstrated to be an extremely difficult age for introducing a young male. For these reasons it is recommended that individuals, in particular males

be introduced as new members in a group by the age of 5 or 6 years when their presence may not seem as threatening.

Adults

According to Jane Goodall, a chimpanzee is considered to be an adult only after it has reached both sexual and social maturity. A conflict between two adult chimpanzees can lead to serious injury or even death, and therefore extreme caution should be taken when attempting such an introduction. Adult females in full cycle will probably have few problems when introduced to an adult male. His interest in her at that time will more likely be affiliative rather than aggressive. If facilities allow, these two individuals may be kept alone together until her cycle is over before introducing other females. Female introductions to each other may go more smoothly if neither female is cycling.

Integrating an adult male into a group that already has an adult male may be one of the most difficult introductions. The dominance hierarchy among males is very strong and a threat to this could result in serious and possibly fatal fighting. Because the difficulties in these adult male introductions could be numerous, especially when cycling females become involved, it is again recommended that new males be introduced to an established group when they are no more than 5-6 years old. In this way they can grow into the male society gradually. If an introduction of an adult male must take place, keep several things in mind. There should be plenty of room for the males to get away from each other. There also should be numerous objects, either natural or artificial, that the males can use to enhance their rather boisterous and volatile displays. Hopefully much of the displaying will be attempts to “out bluff” each other. Some aggression, which is necessary in order for the males to establish themselves, will occur. Compressed lips, hair-erection, hunching, bluff charges, manipulation of objects like branches, throwing objects, slapping at objects or drumming the feet, barking and even screaming are all part of a male’s attempts to intimidate another male without having to fight. Physical aggression like biting could be quite serious. Wounds to the genital area especially might occur during severe aggression, and should be grounds for immediately separating the two individuals. If a bite wound or other physical injury is inflicted that needs immediate medical attention, staff should be ready and prepared to separate the males quickly. Some helpful items, such as a high pressure hose and a fire extinguisher, should be on hand. However, some injuries that are inflicted by biting are not serious and the males should not be separated each time it occurs. It may be more important to allow the males to work out their differences and reach a point of reconciliation before they are separated to inspect a wound. This will do more to strengthen the bond between them than having them refight the same battle over again.

If after a fight, reconciliation behaviours such as grooming or embracing are not observed, then the situation should still be considered volatile and monitored closely. If this is the case, the individuals may need to be separated at night or any other time that they cannot be watched.

It cannot be stressed enough that it is extremely important to be flexible during the introduction process. No two chimpanzees will react the same way to every situation. Close monitoring should be continued for some time (maybe months) after the introductions to make sure that the new individual is establishing a strong and effective relationship with other group members.

Behavioural modification techniques have been used to help in the socialization of a variety of animals. It is possible to reinforce positive behaviours by rewarding not being aggressive, or for allowing a subordinate individual to feed nearby. Although these techniques should be done by a keeper who has been trained to use them, they can be an affective aid in the introduction of unfamiliar animals.

**Chimpanzee Sanctuaries:
Guidelines and Management
Workshop Report**

Section 10

Appendices

D: Care

CARE

INTRODUCTION

The purpose of this chapter is to outline the basic issues involved in the daily care of chimpanzees in sanctuaries. It is divided into several sections, each dealing with a specific aspect of care, e.g., conditioning, safety, escape, staff, observation, etc. Each of these sections, and the issues they discuss, are inter-related. For example, issues related to escapes (e.g., developing a specific plan for handling an escape) cannot be separated from issues related to staff (e.g., the level of experience of the caregivers) or from issues involved in condition (e.g., knowing how a caregiver's behaviour affects a particular chimpanzee) or from observation (e.g., knowing the traits of specific individual chimpanzees). The reader is urged to keep in mind that the information, recommendations, and suggestions in the various sections of this chapter are part of a large picture. This picture includes all aspects of care and speaks to the underlying approach of the Manual to provide the best possible quality of life for chimpanzees in captivity.

Fundamental to providing an environment that will promote a high quality of life for captive chimpanzees is the role of the caregiver in the lives of his/her charges. The relationship that forms between a caregiver and a chimpanzee is the base on which most other activities are founded. A caregiver's knowledge, experience, and philosophy of care guides all of his/her interactions with the chimpanzees and does much to determine the quality of life and daily activities of the chimpanzees in her/his care. Institutional support and consistency in care philosophy and protocols are also primary factors in promoting a caregiver/chimpanzee relationship that promotes a high quality of life for captive chimpanzees. Factors such as facility design, enrichment, and others addressed in the various chapters of the Manual also are inter-related with care, and affect the lives of captive chimpanzees. Each of these factors, alone and as a whole, must be approached as part of the responsibility we take on when we keep chimpanzees in captive environments.

The intelligence, complex social interactions, physical capabilities, temperament, and species-typical behaviours of chimpanzees affect all aspects of their care in captive environments. The unique characteristics of the species imposes special considerations for facility design, daily care protocols, keeper vigilance, behavioural enrichment, chimpanzee and human safety and health, and the type of relationship that forms between a caregiver and the chimpanzees.

CAREGIVER/CHIMPANZEE RELATIONSHIP

The relationship between caregiver and chimpanzee in a sanctuary setting is broadly dependent upon the philosophy of the sanctuary (e.g. hands-off/ hands-on policies), the age of the chimpanzees as well as size and design of the enclosures.

Points to be considered:

Promotion of caregiver's knowledge and understanding of chimpanzees by:

- developing a clear and comprehensive policy supporting the caregivers' role in order to maximize their ability to care for the chimpanzees. Policy should ensure free communication between staff and management
- encouraging the caregivers to play an active role in the decision making process related to the chimpanzees in their care (e.g. in designing enclosure, developing enrichment programs etc.)
- caregivers should be willing to further their training and a program should be developed to facilitate this wherever possible (e.g. providing literature, contact with visiting experts etc.)
- establishing exchange programs between sanctuaries and other institution throughout the world to promote sharing of knowledge and experience
- encouraging initiation and participation of caregivers in research, education and conservation programs developed by the sanctuary
- keeping of daily records on the chimpanzee's activity and behaviour
- caregiver/chimpanzee ratio will also affect the relationship and will be heavily influenced by enclosure design, management protocols, chimpanzee cooperation and age of individuals.
- caregivers should be encouraged to maintain a positive attitude towards the chimpanzees avoiding human conflict in their presence
- caregivers should interact with chimpanzees only when a specific reason has been determined (i.e. attempts should be made not to overly interfere with the social dynamics of the group)
- a degree of contact with each chimpanzee should however been maintained so that veterinary procedures can be facilitated when these are needed

TRAINING (conditioning and social learning)

Conditioning and social learning are powerful tools which may be used in daily management, rehabilitation and release programs of chimpanzees in sanctuaries if they are thought to be in accordance with the philosophy and aims of the sanctuary.

Uses of conditioning and social learning for sanctuaries include:

- the daily moving and management of chimpanzees in enclosure
- veterinary procedures
- decreasing frequency of abnormal or inappropriate behaviour (e.g. stereotypic behaviour; spitting, faeces throwing)
- cooperative feeding and aggression management
- acquisition of species appropriate skills (e.g. nest building)
- predator avoidance and respect for barriers (e.g. moats, electric fence and cage)

Conditioning

The word conditioning has several negative connotations for many people. Some associate the word with establishing strict control over an animal's movements and activities, reducing the animal to an automation whose every action is constrained and programmed. This extremely narrow view of conditioning is the antithesis of the way in which conditioning is used in this Manual. Conditioning, in the broader sense used here, is based on an awareness that a particular behaviour is the result of specific environmental conditions and the consequences of acting in a particular way. Conditioning is merely the manipulation of environmental conditions and consequences to promote behaviours that are necessary to provide high quality care for chimpanzees. Not attempt should be made to control every aspect of a design or enrichment, that can be used to enhance captive environments

Conditioning is inevitable. Anytime humans interact with chimpanzees, or almost any other species for that matter, they set up environmental conditions (stimuli) and contingencies that affect the chimpanzee's behaviour. Often these environmental conditions and contingencies are inadvertent, or the human is simply unaware of how his/her behaviour is affecting the chimpanzee. The behaviour of caregivers is also as affected by the behaviour of the chimpanzees as the chimpanzee's behaviour is affected by the caregivers. The chimpanzee's behaviour creates its own set of stimuli and contingencies that control how the caregiver will act. The interaction of a caregiver and a chimpanzee is a dynamic flow of changes in stimuli and contingencies that shapes the interaction.

Part of what determines the environmental conditions and contingencies that operate in the interaction between a caregiver and chimpanzee are the caregiver's attitudes toward the chimpanzee, her/his empathy for the chimpanzees, ideas of what his/her XXX

Conditioning in a Nutshell

The following is a list of the key points of conditioning:

- A reinforcer increases the frequency of a behaviour. Positive reinforcers are stimuli that an animal will work to get, and negative reinforcers are stimuli that an animal will work to avoid or escape. Both types of reinforcers increase the frequency of a behaviour.
- The behaviour that is reinforced is the last act an animal engages in before the reinforcer occurs. For example, you are attempting to positively reinforce a chimpanzee for coming over to a containment barrier. The chimpanzee comes over, vocalizes loudly, and pounds on the barrier, then you give it the reinforcer. In this case you are not only reinforcing coming over to the barrier, but also the vocalization and most directly pounding on the bars. If coming quietly to the barrier is the desired behaviour, then extinguishing the vocalization and pounding while only reinforcing coming over quietly will accomplish the desired results. This is a rather simple form of shaping.

- An animal will move toward reinforcing stimuli and away from aversive stimuli. Any given situation is made up of a number of stimuli, some of which may be reinforcing, some aversive. Examining the situation carefully will help to identify the sources of reinforcement that are available and provide clues as to why an animal is behaving in a particular way.
- Modifying behaviour can be accomplished by altering environmental conditions and contingencies. Modifying behaviour requires an awareness of the stimuli and contingencies that are operating in a particular situation. Careful consideration of the stimuli and contingencies that are operating, and being creative in altering the environment can greatly enhance the effectiveness of attempts to modify behaviour.
- Chimpanzees can share caregivers just as caregivers can shape chimpanzees. The behaviour of both parties are part of the environmental conditions and contingencies that determine an interaction.
- The caregiver and the chimpanzee both have predispositions to behave in certain ways. The past history of both parties sets up contingencies that will operate during an interaction between a chimpanzee and a caregiver.
- A punisher decreases the frequency of the behaviour on which it is contingent. Punishers are aversive stimuli that result from behaving in a particular way. A punisher is unavoidably associated with the agent administering the punishment. Aggression is a common response to punishment.
- An animal's perception of the value of a reinforcer or the intensity of an aversive stimulus will determine its effect. Perceptions of value and intensity are determined by an individual's past history; his/her experiences in similar situations or observation of others in similar situations. Other factors that have contributed to shaping an individual's "personality" will affect perceptions of value and intensity. Each individual has a different past history, and, therefore, a more or less unique perception of value and intensity. Common perceptions and responses are the result of common experiences.
- High intensity aversive stimuli will elicit fear and aggression. Eliciting fear and aggression interfere with behaviour modification and severely limit the utility of aversive stimuli.
- Extinction is a decrease in the frequency of a behaviour that occurs when reinforcement is withdrawn. Extinction can be used to eliminate inappropriate behaviours but it will not be suitable in instances where the behaviour is life threatening or could cause serious injury. Extinction can also be a long-term procedure.
- Extinction coupled with reinforcement of other, more appropriate behaviours, can be effective in reducing or eliminating inappropriate, dangerous, or self-injurious behaviours.
- Shaping is a process by which a particular behaviour is taught. Shaping involves a complex series of reinforcements and extinctions of close and closer approximations of a desired behaviour. Shaping is a step by step

process that requires a thorough knowledge of the techniques and principles involved.

Social Learning Training

The use of social learning in training chimpanzees has never been formally explored, however it is recognized that sanctuary workers have already been using this tool and an open discussion of its role in training is encouraged.

Some examples of its applications are:

- use of appropriate chimp vocalizations by humans to elicit a specific reaction (e.g. alarm call to extricate a chimpanzee from a dangerous situation or predator avoidance)
- demonstration of nest building and feeding on appropriate food sources
- encouraging social interactions (e.g. grooming) and defusing aggression

Social learning can be either human or chimpanzee mediated. Thus pairing a more experienced chimpanzee with a naïve chimpanzee is a common practice that could be formalized into a more specific training program (e.g. creation of a list of skills which are thought to be important for chimps that can be taught through conditioning and social learning).

The individuals chimpanzees history will play a big part in the social learning strategy that will be used for their rehabilitation.

Recommendations for sanctuaries:

- organisation of a workshop uniting caregivers representing each sanctuary to establish the basic knowledge of training skills (as well as data collection procedures, see below)
- develop a training programme specific to the needs of each orphan for his rehabilitation and reintroduction in the group.
- negative avoidance is not recommended and should be considered only in special circumstances where the benefits to the chimpanzees are guaranteed (e.g. teaching chimpanzees to avoid human contact prior to release in a wild environment where poaching may be an issue)

Conditioning Recommendations:

- Develop a staff training programme to ensure that all caregivers understand the basics of training and how their behaviour and the behaviour of the chimpanzees affects the interactions between humans and chimpanzees. Include in the training programme specific examination of the role of conditioning in performing daily care routines. Identify appropriate and inappropriate use of reinforcers and aversive stimuli. Also include discussions of how caregiver's attitudes, empathy, understanding of his/her job, philosophy of quality care, and the species-typical behaviour patterns of chimpanzees affect the interactions of humans and chimpanzees and daily care.

- Hold regular discussions involving the caregiver and management staff to examine, in detail, the ways in which the behaviour of the human staff is affecting the chimpanzees' behaviour. Include in these discussions the ways in which the chimpanzees are shaping the humans to act in particular ways. Also discuss the caregivers' attitudes, empathy, understanding of what is expected of them, and knowledge of conditioning techniques used in daily care.
- Develop a standard operating procedure (SOP) for the use of conditioning techniques. Include what type of reinforcers and aversive stimuli will be used, and the conditions under which they will be used. Also evaluate the effectiveness of the techniques to ensure they are accomplishing what they were intended to do and do not produce stressful conditions for the chimpanzees.
- If a specific behaviour is to be shaped, e.g., extending an arm for injection or taking blood samples, develop a step by step plan for the process. Identify the individuals to perform the shaping, and evaluate the progress of the procedure. Be sure the individuals involved thoroughly understand and follow the procedure. Bringing in outside experts, such as a behavioural psychologist from a local university to consult on the development of the plan may be necessary.
- Develop specific plans for before modifying inappropriate, dangerous or self-injurious behaviours. Identify the staff members that will perform the behaviour modification, outline the specific techniques, reinforcers, and aversive stimuli that will be used. Ensure that all of the staff involved understand the techniques involved and follow the procedure. Evaluate the progress of the procedure and modify it if necessary.

COLLECTION OF OBSERVATIONAL INFORMATION

Behavioural observation in sanctuaries can be a useful tool to monitor the well-being of the chimpanzees as well as collecting valuable information about the life of chimpanzees in sanctuaries.

Recommendations specific to sanctuaries

- to develop a common ethogram for all sanctuaries
- after having carried out a training workshop for sanctuary keepers in data collection methods and value of observational research

This data

- would provide valuable information on the long-term development of group dynamics in sanctuary chimpanzees
- would form a valuable tool for comparison of different home environments and their effects on chimpanzee behaviours
- may be used by incoming researchers involved in more specific projects
- analysis of data may be carried out by ???

Recommendations for Systematic Behavioural Observation:

- Establish an institutional philosophy that incorporates regular observation periods into the daily routine.
- Have caregivers conduct a significant percentage of chimpanzee observations in order to improve their familiarity with the individuals and the group as a whole.
- Identify specific issues and goals relating to the husbandry and management of chimpanzees for which a systematic observation programme will facilitate an understanding of the issue or a completion of a goal.
- Develop an approach to systematic observation that incorporates a high level of cooperation between all potential participants. Submit a written proposal for any systematic observation programme that includes: objectives, start time, end time, facilities involved and staff involved. Review the proposal with management and caregiver staff in an effort to facilitate cooperation, support and involvement with the programme.
- Develop facilities that aid in the collection of observational data.

Suggestions for Systematic Behavioural Observation:

- Establish observation periods as part of the daily routine. Observations of the group as a whole will be sufficient for general husbandry purposes. Focal animal observation is most appropriate for dealing with specific problems or questions.
- Have caregivers conduct the daily routine observations. This will develop a higher level of awareness of the individual chimpanzees and of the group dynamics that will be invaluable in providing optimal care. Have caregivers work closely with any students or researchers that are collecting regular observational data.
- Help all those involved in the management and care of the chimps understand the value of observations. Develop an institutional approach/policy that encourages observation both for the management of a single group and to address questions and concerns at the species level. Each captive environment can provide valuable information that can be collected, analysed and presented to all institutions housing chimpanzees in an effort to provide optimal care. Additionally, information gained from captive research and observation has the potential to be of significant benefit to wild populations as the pressures affecting population declines become more severe and the need to “manage” the remaining wild populations to maintain a healthy gene pool increases.
- Have open discussions among all those involved in a potential research/observational project. This will help each person understand the objectives, needs and functional parameters of the others.
- Plan for providing specialized facilities that would aid in the collection of observational data.

ENVIRONMENTAL ENRICHMENT

Wild chimpanzees inhabit a complex and rich social and physical environment thus to ensure the well being of sanctuary chimpanzees it is recommended that environmental enrichment programs play a role in any sanctuary. The requirement for the degree and kind of enrichment will be dependent upon the specific enclosure design, habitat, group size and age. Where individual chimpanzees exhibit particular idiosyncratic behaviours a more in depth enrichment program may be required. Furthermore more intensive environmental enrichment programs should be considered for chimpanzees in quarantine especially if in isolation. (A note of caution: enrichment can never be a substitute for a rich social and natural environment.)

Use of enrichment in sanctuaries

- promote the development of pre-release skills (e.g. jungle gym specifically created for the development of brachiation)
- to enhance the well being of chimpanzees when in a poor environmental surroundings (e.g. solitary quarantine)
- assisting the developmental process of young orphaned chimps

Some commonly used enrichment techniques are:

- Dietary Enrichment: browse, scatter feed, puzzle feeding, termite mounds, forest and unprocessed foods
- Environmental Engineering: jungle gyms, hammocks, naturalistic habitats, cut grass for nest making, substrates (e.g. wood chipping/leaves)
- Non-Dietary: magazines, old clothes/shoes, balls, tunnels

Suggestion for sanctuaries

- enrichment manual shared throughout sanctuaries (see Chris Mitchell for starting point)
- collection and provision of forest foods wherever possible

HANDREARING

Hand rearing of infant chimpanzees is a fundamental part of sanctuary work. Ideally a surrogate chimpanzee mother would be found as soon as possible after the arrival of the orphaned chimpanzee however since this option is not always available a clear policy for the hand rearing of infants should be developed in each sanctuary, with room for flexibility considering the specific needs of each individual chimpanzee.

Points to be considered:

- hand reared chimpanzees should be re-socialized as soon as possible, however it is important to recognize that the schedule of reintroduction will vary for each chimpanzee depending on its history and personality.
- hand-reared infants should have as much social contact as possible whether with peers, conspecifics of any age or human caregivers. Conspecifics and peers being the top priority.

- all sanctuaries should have a comprehensive hand-rearing protocol including items such as: types and amount of food, feeding schedule, weighing schedule, medical examinations to be given, enrichment program, resocialization methods to be employed and most IMPORTANTLY a FULL RECORD for each infant should be kept for all of the above elements
- the use of specie specific vocalizations and behaviours are greatly encouraged in caregivers to promote as natural development as possible of the infants
- avoid rearing different species together since this may result in abnormal behavioural development
- when allocating a chimp to a surrogate human caregiver priority should be given to continuity of care from one individual; however contact with select other individuals (e.g. other caregivers) should also be encouraged to promote socialization
- allowing chimpanzees to fall asleep in the arms of a caregiver reduces stress and reproduces the natural state in which infant chimpanzees would be raised. The use of security blankets may be a useful tool in the instance in which human contact is absent
- the use of bottles in young chimpanzees satisfies a need for sucking (which appears to have a comforting effect and would naturally occur until the age of 4 when weaning occurs) this is therefore encouraged. The use of feeder cups (???) in young chimpanzees may also be a useful tool before switching to regular cups.
- ensure that items in the enrichment program are safe and developmentally appropriate
- high standards of hygiene should be maintained at all times (e.g. periodic change of towels used by the infants)

References

- Clinical Management of Infant Great Apes, eds. Graham and Bowen (for specific information in dealing with the physical development of hand-reared infant chimpanzees)
- Hand-rearing non-human primates, Kirkwood and ?????? (for physiological development data)

FEEDING BEHAVIOUR

Chimpanzee natural dietary behaviour should be considered and mimicked as closely as possible to promote physical and psychological well being.

Points to be considered include:

- random vs scheduled feeding; both these strategies have positive points and will be chosen on the basis of the sanctuaries individual needs, enclosure types, and visitor schedules
- food can be presented so as to minimize aggression by spreading it evenly among all individuals (e.g. scatter feeding)
- scattering grains, raisin and nuts to supplement main meals is a form of enrichment
- for meals it is preferable to give food without altering it from its natural state
- provision of forest food is encouraged wherever possible
- use of food in enrichment program is encouraged

