

Reintro Redeux



IUCN / SSC Reintroduction Specialist Group, South & East Asia

No. 1, December 2004

Reintroduction Specialist Group of the SSC / IUCN, an active multidisciplinary specialist group has a very hard mandate -- promote awareness about scientific reintroductions around the world. The activities of RSG include:

- Review and comment on the technical aspects of re-introduction projects.
- Encourage governmental and non-governmental organizations to conduct viable re-introduction projects according to IUCN policy guidelines.
- Prepare and disseminate: newsletters, CD-ROM's, guidelines and policy statements.
- Maintain a viable international network to enable RSG to carry out its Mission.

Complicating the process is also the diplomacy and tact the group has to maintain in evaluating activities in the name of reintroduction around the world. Usually, this is pretty hard task, but the chair, Dr. Frederick Launay and the Executive Officer, Mr. Pritpal Soorae (Micky) have admirably carried this onerous task with much aplomb. To their credit, and to increase effectiveness of the group, the RSG established a three-tier approach to tackle the group's mandate appointing regional and taxonomic chairs. The South and East Asian region was one of the last ones to be formed and we were appointed Co-chairs in December 2002.

We have been active to some extent and are trying to get better at reaching out to all stakeholders in this huge region of South and East Asia -- from India to Japan. Last year, we had the first RSG regional meeting along with CBSG South Asia meeting in Sri Lanka. Fred and Micky were there for the two-day training workshop and presented the guidelines and other reintroduction evaluation tools to about 40 people at the National Zoo in Dahiwela. This year, we are planning on repeating the training and meeting at Lahore, Pakistan on 29 and 30 of November for the benefit of Pakistani wildlifers, foresters, NGOs, government officials, policy makers, etc. We hope to release this Newsletter on that occasion.

Reintro Redeux is the result of umpteen deliberations and fights between us over six months now. It symbolises our task ahead and the path we need to take to tackle this vexing situation of systematic reintroduction vs. irresponsible releases in our region. Reintroduction Revisited could have served as the Newsletter head just as well, but keeping in tune with rest of our regional newsletters, **Reintro Redeux** fits our "play on words" bill perfectly. That the RSG Chair is a Frenchman has had no bearing, whatsoever, on our decision for this name.

We encourage you to send us constructive comments on this issue and also provide writeups of case studies and examples of reintroductions or releases from your region. Discursive reports are also encouraged.

Sanjay Molur and Sally Walker

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Report of the First Joint Meeting of CBSG, S. Asia & IUCN SSC, RSG, S & E Asia 8-9 December, National Zoological Gardens, Dehiwala, Sri Lanka

In 2002 the SSC IUCN Re-introduction Specialist Group reorganised itself by appointing taxonomic and regional representatives. One of the regions identified for the task of monitoring reintroduction activities is the South and East Asian region including India eastwards to Japan, which includes the regions of South Asia, South East Asia and Far East Asia. RSG, S & E Asia is based at Zoo Outreach Organisation which also hosts CBSG, South Asia. Sanjay Molur, Dy. Director, Z.O.O. and Founder /Secretary W.I.L.D. was appointed Chair of the group.

As its first major activity, RSG South and East Asia a joint meeting with another IUCN SSC disciplinary SG, CBSG South Asia, held in Sri Lanka, at the National Zoo, Dehiwala on 8-9 December 2003 in connection with three other workshops organised by ZOO/CBSG, SA and other organizations. These were a meeting of the South Asian Zoo Association (1-5 Dec), a founding meeting of an intended Sri Lankan Invertebrate Working Group, a P.H.V.A. for Sri Lankan Star Tortoise and C.A.M.P. for Sri Lankan chelonians. One objective of the meeting was to exploit the opportunity of meeting people from other countries with a stake in confiscations and reintroduction. A review of reintroductions in the region accompanied a form of a training, consisting of an explanations of RSG Guidelines for Reintroduction including the Primate Guidelines by the Chair of RSG, Dr. Fredrick Launay and for Disposal of Confiscated Animals by Program Officer, Pritpal Soorae.

Confiscations and Reintroductions: This workshop was also a first step towards organising meetings of CBSG with RSG S & E Asia frequently throughout the region, taking advantage of other meetings in which members and other wildlife actioners gather. In this first meeting the Convenor of CBSG, South Asia, Sally Walker, reviewed the tools and processes of the Conservation Breeding Specialist Group, after which RSG Chair, Dr. Frederick Launay and Pgm. Officer, Pritpal Soorae shared "dos and don'ts" of confiscation and reintroduction as per RSG Guidelines, highlighting the impact of various types of confiscations and reintroductions globally. Following that, participants contributed case studies from their experience in their country.

Presentations of Case Studies by participants

Anslem de Silva — Reintroductions in Sri Lanka with special reference to herpetofauna.

Manoj Misra — Asiatic Lion reintroduction update

Satya Priya Sinha — Indian Rhino reintroduction in Dudhwa

Mukesh Chalise — Reintroduction in Nepal

Qadir Mahal — Reintroductions in Pakistan

Dr. Razzaque Miah — Examples from Bangladesh

C. Srinivasulu — Reintroductions in Andhra Pradesh

Wolfgang Dittus — Primate reintroductions in Sri Lanka

S. Bhupathy — Reintroduction of turtles for Gangetic cleaning in India

Mickey Soorae, Executive Officer Reintroduction S.G. reported the meeting in RSG News :

"The RSG nominated Mr. Sanjay Molur in December 2002 as the RSG's South & East Asia Regional Chair. This was an important step forward as this region is quite active in re-introduction projects and is also facing a serious problem with issues such as the placement of live confiscated animals. It was then decided to hold a joint CBSG/RSG meeting with stakeholders from South Asia who are dealing with issues relating to reintroductions and confiscations. This meeting proved very useful for the participants and one of the most important lessons learnt was that re-introductions are long-term, expensive exercises and not a solution for disposing live confiscated animals. A very strong point was that reintroductions are not a means of disposing surplus stock of animals and that zoos and captive-breeding institutions should not see this as way out. Re-introductions must be driven by the availability of suitable habitat and need before the species in question can be sourced."

Thanks:

To Chester Zoo/ North of England Zoological Society for funding RSG and this meeting.

To National Zoological Gardens, Sri Lanka for hosting the meeting



Monkey and the Lion

H.S. Panwar¹ and Manoj Kumar Misra²

Two-hundred-and-fifty urban rhesus monkeys from Delhi have been released during the month of June 2004 into the wild environs of Kuno Sanctuary in north west MP.

The news has disturbed the conservationists no end. One needs to delve deeper into its origins. Kuno Sanctuary was identified in early 1990s following a rigorous scientific enquiry led by the scientists at the Dehradun based Wildlife Institute of India, as the second home for the endangered Asiatic Lion. Government of India supported a decade long project investing crores of rupees and the MP Forest Department made an outstanding effort to 'prepare' the Kuno habitat for the Lion. This preparation has seen relocation of around 10000 people residing in 19 villages inside the sanctuary to sites outside. An effort to ameliorate the habitat and build up the herbivore prey base for the lions in the form of Nilgai, Chital, and Wild Boar has borne slow but steady results.

In its orders on a petition the Supreme Court directed the Central Government to have the captured Delhi monkeys released in the forests in MP. In consequence, 250 such monkeys have been released in the so called 'vacant' habitat in Kuno Sanctuary in the month of June 2004. Prima facie the manner of this transfer is against all conservation norms, the principles of animal welfare and the well settled and standardized practices of reintroduction of a wild species into the wilds, not to mention the irreparable harm that it would have done to Kuno Sanctuary in its claim to be the possible second home to the lions.

Wild animals that come to inhabit urban sites develop such traits and strategies that on one hand make them adapt to urban environments on the other result in considerable decrease in their wild instincts and skills for survival in wilderness. Non-human primates like monkeys and langurs living in urban settings tend to develop a dependence on human environments and often suffer from diseases like tuberculosis. They scavenge at the festering urban garbage bins and in the process get exposed to infections besides other forms of urban food poisoning, which debilitate them. Their free ranging existence within the sanctuary and nearby forests is bound to spread such infections to wild animals of most inhabitant wild species. In the worst case scenario they would tend to look for and maraud nearby human settlements. If the latter were to happen in this case it would be a classic case of transferring a problem from a vocal urban conglomerate to a voiceless rural settlement.

It is to guard against such less than thoughtful happenings that wildlife experts specially the Reintroduction Specialist Group of IUCN have devised after considerable scientific debate and deliberations a set of "do's and don'ts" and protocols for reintroductions to ensure the long term survival of the released animals. These IUCN guidelines also provide for the safety of habitat of release and of the other animals living there from spread of diseases and disturbance to the latter's group dynamics. Wild animals whenever they are moved around require detailed individual health investigation and only those that have been tested to be healthy and free from any disease are selected for release. At the new site

they also need a good period of acclimatization before free release. In short such reintroductions are not easy and routine. Even Zoos around the globe despite their best intentions and care desist from attempting such reintroductions.

The Wildlife (Protection) Act 1972 as amended in 2002 has provided for the establishment of the National Board for Wildlife and the State Board of Wildlife in each state to deal with policy and emerging issues on wildlife matters. Such a reintroduction is a major wildlife management activity and would clearly require a referral and advice from such a body.

The month of June is the worst possible month for any such reintroduction, more so into an arid habitat like Kuno Sanctuary as there is little water and food there in the form of leaves, fruits and berries for the monkeys.

In the present instance, a large group of monkeys from Delhi were apparently in a hurried fashion transported and released into the sanctuary without a mandatory referral to the State Wildlife Board, without any thorough medical check up and in a month of the year when such an action is best avoided. The fate of such monkeys in the wilds of the Kuno Sanctuary could be worse than in the lanes and by lanes of Delhi. Clearly the powers that be have failed to observe the dictates of good science and animal welfare. The released monkeys even if they manage to survive the warmest month of the year without food and water in Kuno could soon become the nemesis of the villagers who are still to fully come to grips with a translocation they agreed to suffer in the interest of receiving lions from Gir and not indeed the monkeys from Delhi.

This article is not to suggest that the man animal conflict scenario is unreal or the state should not be taking measures to resolve the problem. On the contrary it seeks to underline the increasing problem of man animal conflict be it in Delhi with monkeys or Mumbai with straying leopards or Chattisgarh with wild elephants. The Kuno misadventure only highlights the poor state of the State's preparedness to deal with such issues. Resultantly ad hocism prevails. While the state seeks to wish away the problem, the media treats it with little more than an event and the NGOs choose to mull over the merits and the demerits of taking the bull by the horn. Above all the highest court in the land gets misadvised into directing actions that might create more problems than solving the existing one.

It is time that a national task force consisting of eminent conservationists was made to go into the whole question of human animal conflicts leading to actions that balance the requirements of both the animals and the humans. If the findings ordain changing the law or enunciating a national policy on the issue, so be it. But whatever it is, there is little time to lose.

¹ H.S. Panwar is the founder Director of the Wildlife Institute of India, and the former Director, Project Tiger Government of India

² Manoj K Misra is the former Chief Conservator of Forests, Chattisgarh and Former Director, TRAFFIC India / WWF India.

4 Opinion -- Monkey, Lion, Leopard and the Deer

Vidhya Atreya

Panwar and Mishra's article (2004¹) on the movements of non-human primates deals with a very relevant and disturbing issue. Disturbing because there does not appear to be any concern among Indian conservationists about the disastrous consequences of the rampant movements of wild animals or worse still, lack of information on the effect of the same.

The most commonly translocated animals are

1. problem animals that have come into conflict with humans (non-human primates, leopards, snakes)
2. surplus zoo populations (usually herbivores).

The former are usually taken from, as Panwar and Mishra say in the context of non-human primates, "vocal urban conglomerate" and released into "voiceless rural settlements". This is particularly dangerous because of the power the rural populace have to take the law into their own hands thereby destroying all the conservation efforts of the past decades. The urban citizenry can only go to the press, but people in the rural areas can directly eliminate wildlife. Although, the latter kind of movements: i.e., translocations of herbivores from zoos into Protected Areas are not directly harmful to human life the thought that the TB infested ungulates are released into our already stressed Protected Areas is frightening. This combined with the fact that there is absolutely no post – release monitoring of any kind in our country makes this trend all the more dangerous. It also does not put any responsibility on the zoo managers to control the populations of their ungulates. In this age of scientific advancement, we Indians still live in a pre-historic time zone with respect to management of wildlife; be it captive or wild and more serious is the fact that there are no constraints preventing better management except the lack of desire to change.

Perhaps I am being a bit harsh but consider the numbers and areas involved with respect to animals capable of harming humans. 250 rhesus monkeys moved to a rural setting because the urbanites did not want the marauders. At least 150 leopards moved from one area to another in Maharashtra over two years because of man – leopard conflict at the site of capture, at least 25 leopards moved in N. Bengal in five years. Uttaranchal, MP, HP, Gujarat; all these states respond to man leopard conflict by moving leopards trapped at the conflict site to forested areas. Leopards trapped in Uttaranchal are moved to Rajaji NP. Leopards trapped in N. Bengal are moved to Gorumara N.P, Chapramari WLS, Buxa TR and Jaldapara WLS. Even in Gir this was the management strategy where leopards and lions (in the past) trapped outside the park were moved back into the core area, a distance of less than 100km. This has also been routinely carried out in Sanjay Gandhi National Park, Mumbai where leopards trapped due to conflict in and around SGNP are released back into the core areas of the Park. Considering the pattern seen across the country, one cannot help but raise the question of whether these movements are actually exacerbating conflict? In the case of leopards there is no doubt that it is and the reasons are directly related to the biology of the species which we do not even consider even while making management plans for situations related to the species in question. It is also a matter of concern that there is hardly any relevant biological

information on species that come into conflict in the Indian setting.

Four important biological aspects of leopards indicate that by translocations we are actually increasing leopard populations as well as increasing conflict. In brief, they are

1. the highly territorial society of leopards
2. the presence of floaters in the population
3. their phenomenal homing powers and
4. their capability to survive near human habitations.

However, even before we consider the biology of large cats, the very definition of translocation implies that we are increasing populations. "**Translocation**" is defined by the IUCN as "the intentional release of animals to the wild in an attempt to establish, re-establish, or augment a population". The definition therefore implies that following translocation, the area will have a presence of the species (establish, re-establish) or an increased presence of the species (augment). In our country, it will only "augment" leopard populations since the leopard occurs throughout India and would also be present in numbers that the habitat can support optimally, at the sites of translocation. ***In effect we are augmenting a population of "problem animals" through translocations.***

This might also explain the increase in leopard populations in many parts of our country. However, do we want an increase in the numbers of leopards that are adapted to surviving close to humans? Translocation is a very scientific procedure meant to be carried out under the supervision of scientists; a specific act meant to establish and/or increase populations of a species whose existence is threatened. Translocation is NOT recommended as a strategy for dealing with problem animals (see Linnell *et al.* 1997²) which is what it has become in our country.

There needs to be a complete rethink on this issue of movements of wild animals either because they have come into conflict or because they are a burden to our zoological parks. In the former case, we are actually increasing conflict, be it with problem-causing leopards or monkeys and by doing so we are moving back the conservation clock by many decades and eroding the past tolerance levels of rural people to wildlife. And as Panwar and Mishra recommend it is time that policies and guidelines are created with the help of managers, scientists, NGO's and conservationists for species that often come into conflict with humans.

¹ Panwar, H.S. & M.K. Mishra. 2004. Monkey and the Lion. *Zoos' Print* XIX (9).

¹IUCN, "Position Statement on the translocation of living organisms: Introduction, re-introduction, and re-stocking (IUCN Council, Gland, Switzerland. 4 September 1987).

² Linnell, J.D.C., R. Aanes, J.E. Swenson, J. Odden & M.E. Smith. 1997. Translocation of Carnivores as a Method for Managing Problem Animals: a Review. *Biodiversity and Conservation* 6 (9) : 1245- 1257.

PYGMY LORISES RE-INTRODUCTION STUDY IN VIETNAM

PRELIMINARY RESULTS, JANUARY 2003

Ulrike Streicher

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Cuc Phuong National Park, Vietnam

1. BACKGROUND

The distribution of the Pygmy Loris *Nycticebus pygmaeus* is limited to Vietnam, eastern Laos and a few locations in southern China. Fieldwork in these countries has been scarce and little is known about the lorises' living or status in the wild.

In Vietnam Pygmy Lorises are common in animal markets and at animal traders, where they are mainly sold for the pet trade, but also to be used in traditional medicines. The stress-sensitive primate usually dies in captivity mainly as a result of inadequate housing and too much disturbance.

Vietnamese law protects the Pygmy Loris since 1992 at the highest level, but the law enforcement is weak and lorises are hunted or occasionally "collected" even inside protected areas and National Parks and unfortunately forest protection authorities are little motivated to strictly pursue hunting and trading of this inconspicuous primate.

The Red Data Book of Vietnam and the IUCN Red List of Endangered Species list the Pygmy Loris as vulnerable, but as a result of the excessive hunting lorises are rapidly decreasing and even vanishing in large parts of their distribution range (Shi, pers.com., 2002).

The international trade with Pygmy Lorises is restricted by CITES which lists the animal in appendix II but nevertheless quite a number of lorises are illegally exported for the international pet trade and the species has been confiscated by customs authorities all over the world e.g. in Germany, the United States, Russia and Singapore.

2. AIM OF THE STUDY

The Endangered Primate Rescue Center at Cuc Phuong National Park, Vietnam, has been established in 1993 to receive and keep endangered primates confiscated from hunters and the illegal wildlife trade within the country. The ultimate goal of the rescue center is to breed these rare species in captivity and finally release the captive bred offspring back to the wild.

The EPRC received the first confiscated Pygmy Lorises in 1996. Since then it has continuously received lorises and has also successfully bred several offspring. In 2000 the center started to exceed its capacity in keeping lorises. New animals were still coming in from the trade and it is the center's duty is to provide a home for all these animals. So it has been decided to reduce the breeding and first look into further long-term placement possibilities for confiscated and possibly captive-bred animals.

The EPRC decided to conduct a study on re-introduction of lorises. The study strived to investigate if confiscated Pygmy

lorises are able to re-establish in a wild habitat. Funding for the project was provided by the Embassy of Switzerland in Hanoi and the Royal Society for the Protection of Cruelty against Animals (RSPCA) from the UK.

3. MATERIALS AND METHODS

3.1 Re-introduction

Primate re-introduction is a highly complicated and sensitive issue. Worldwide there have been a great number of efforts to bring confiscated primates from trade or illegal captivity back into a wild habitat and not all of these primate re-introductions have been successful. Sometimes the results have been beneficial but in other cases they have been disastrous for the re-introduced animals and the wild populations.

The Vietnamese law postulates the release of confiscated valuable wild animals back into their habitat (359/Ttg). Subsequently confiscated animals are at the moment usually simply dumped into the nearby forest without any knowledge on their exact taxonomic status, their origin, their state of health or nutrition and their ability to survive.

The fact that the same legislation also postulates the check for "health, plague and eco-features" is mostly ignored and the animals are often weak and ill from the transport, suffer always from extreme stress and many of them die shortly after the release. To which degree the released animals introduce diseases to wild populations cannot even be assessed.

Some animals survive and establish in the new area which is sometimes located not within their natural distribution range. These animals compete with the resident species about food sources, might hybridise with the resident species and might even drive the resident species out of the area.

To provide guidance and to reduce these disasters the International Union for Conservation of Nature IUCN has established guidelines for re-introductions. However these guidelines are not meant to represent an inflexible code of conduct (IUCN, 2001) and specific national aspects have to be considered as well. To find an applicable and acceptable solution that takes into account not only international standards but as well the national conservation situation is urgently required.

3.2 Animals

Between November 2000 and March 2002 nine animals were selected for release. All these were animals that were confiscated from traders in northern Vietnam. They all were adult at the time of confiscation. Since long-term storage and keeping of live animals determined for the trade is not a common practice in Vietnam it can be assumed that these animals have been captured as adult individuals. The main consideration for selecting animals for release were the state of health and overall condition, the age at the time of confiscation and the genetic identification.

3.3 Quarantine and pre-release treatments

To assure that no diseases are transmitted to the wild populations the animals had to be quarantined before release. In agreement with international requirements and standards

the animals were quarantined for six weeks. They had to be regularly checked for their health, tested for TB, treated against parasites and their taxonomic status had to be exactly identified. IUCN quarantine standards were taken into account as far as possible (Woodford, 2001). The German Primate Institute assisted with the taxonomic identification of the animals.

3.4 Release site

There were two considerations when selecting the release site: The safety from hunting and the suitability as habitat.

According to the Forest Protection and Development Law from 12.8.91 any hunting and exploiting of wildlife inside a special use forest such as a National Park or nature reserve is strictly prohibited. Cuc Phuong is the oldest and probably the most famous National Park in Vietnam but its forest still does not provide a completely safe habitat for the remaining wildlife. As a result of the dense population in the buffer zone, Cuc Phuong suffers from a high hunting pressure.

Thus it was necessary to find an area which provides safety from hunting. Close to the National Park's head quarter a large area had been partly cleared and surrounded by a concrete wall and a fence to cultivate trees several years ago – the botanic garden. The scientific department of the National Park has released captive bred Sika deer into this area. There is no public access to the area and the only people working there occasionally are the staff from the deer farm and the scientific department of the National Park. This area seemed to provide sufficient safety from hunting and human impact.

The botanic garden comprises several hills, which are covered with poor primary forest. Between these hills there are old plantations and secondary forest and the formerly cleared areas are now covered with scrub and elephant grass.

Little is known about the ecology of pygmy lorises in the wild. Subsequently the information about the requirements for a suitable habitat is scarce. Lorises have been found in a variety of different habitats (e.g. Duckworth, 1994, Fitch-Snyder pers.com.). There is little information on the wild food sources of pygmy lorises, thus it was not possible to tell, if the selected area provided sufficient food for the animals. In November 1999 an adult male pygmy lorises had been found close to area that was later selected as release site. This was the definitive proof for the occurrence of pygmy lorises in this area, which could previously only be assumed. It ascertained the suitability of the location as lorises' habitat. The dense forest at the foot of a large hill was selected as release site.

3.5 Observation methods

3.5.1 Direct Observation

Different methods of observation have been used during the study. In the early stages of the study telemetry equipment was not yet available and the only method to obtain information was direct observation.

Lorises can be easily identified by their characteristic eyeshine using any strong torch. The eyeshine of prosimians is general golden-yellow or yellow red (Martin, 1990) and is most easily detected if the source of light is at the same height with the observer's eyes and thus head torches are the most suitable

light sources. Barret (1984) confirmed that *Nycticebus* is less able to detect the wavelength of red light so head torches with red-light filters are the recommended source of light.

Though it has been reported that the animals get used to the observer's white spot lights after a short time (e.g. Wiens, 1995, Nekaris, 2001), comparisons at the rescue center showed that the animals are less disturbed and are less likely to hide when red light filters are used. White light was only tolerated by some animals and was never tolerated at a close distance. From April 2001 onward the animals were monitored by telemetry. Direct observations were conducted as well.

3.5.2 Telemetry

After December 2001 the animals were only monitored by telemetry. The animals were equipped with transmitters and followed using a receiver. Though many species of nocturnal prosimians including the slow loris *Nycticebus coucang* have been radiotracked (Wiens, 1995) there were no previous experiences with telemetry of pygmy lorises.

Transmitters

Due to the animals small body size transmitters for the lorises had to be extremely light-weighted. The weight of the transmitter mainly depends on the size of the batteries. The batteries themselves are the limiting factor for the transmitters lifespan. The selected transmitters were PD- 2C transmitters by the Canadian company Holohil. These transmitters are specially developed for small and very small mammals and the total weight is only 3.9g. The transmitters were fixed around the animals' necks using thin plastic tubing and absorbable surgical suture material as a base. The latter would slowly dissolve by hydrolysis and thus the collar would fall off after a certain period of time. The antenna of the transmitter was partially inserted in the plastic tubing and there was only a short end of about 2.5cm pointing out. This seemed to be only a minor hindrance for the animals' movements. The fixing of the collars was exercised prior to release on some animals. Initially all animals lost the collars after some days due to insufficient tightness of the collar. Later on the technique improved and the release animals did wear their collars already for some time prior to release without any problems.

Receiver and antenna

To track the animals the signals emitted by the transmitters were located with a receiver and a corresponding antenna. The Telonics TR-4 Receiver was the receiver of choice for it was sufficiently handy and small to be carried along when tracking the animals in steep and difficult terrain. The selected compatible antenna was a specifically sturdy model with rubber side elements suitable for usage in heavy foliage and dense scrub. Furthermore the side elements could be detached and

Table 1
Holohil PD-2c Transmitters - Specifications

Weight	3.9g	Battery life	6 months
Serial #	Frequency	Pulse	
59255	164.120	0.59	
59256	164.146	0.60	
59257	164.167	0.60	
59258	164.186	0.59	
59259	164.211	0.60	

Table 2.

Telonics TR-4 Receiver - Specifications

Weight	425g
Time to battery replacement	8hrs (one 9V alkaline battery)
Operating temperature range	- 40 °C - + 70 °C
Dimensions	17 x 9 x 4.5 cm
Internal speaker	muted when earplugs are connected
Frequency coverage	up to 100 channels, selectable by user within a band of 4 MHz
Channel #	Frequency
00	164.000
01	164.010
02	164.020
03	164.040

Table 3

Telonics RA-14 Antenna - Specifications

Directional, heavy duty H-antenna with flexible elements. Front and rear "rubber ducky" elements are detachable for storage. Suitable for handheld use in applications where other antennas might easily be damaged.

Operating Frequency Range 164 - 168 MHz

the antenna could be folded, which allowed transport in a backpack while climbing in difficult terrain, which proved very helpful and necessary.

Triangulation

The animals were located by triangulation. This method is based on the fact that if bearings are taken from different locations that have a reasonable distance from each other, the exact location of the transmitter must be located in the intersection point of the directions of the bearings. Sometimes a large number of different bearings had to be taken to exactly identify the animals sleeping site.

3.6 Proceeding

The releases were performed as a soft releases as stated by IUCN (1999). The cages in which the animals were kept during the quarantine were brought to the selected release site. The animals were fed there at the familiar feeding times with their usual food for several days.

Then the cage was opened, but feeding was continued at the familiar feeding times. Feeding was stopped when the animal was moving far away and seems not to come back for the food any more and the cage was removed.

Observations started with the moment of opening the cage usually at 5pm. Captive animals living under natural climate and light conditions at the EPRC start to be active between 6 and 7pm and the beginning of the activity period was assumed to be similar in the released animals.

Animals were observed during the first weeks after they have been released during the beginning of their activity period from 5pm onward for a varying time.

Their sleeping position was identified during daytime by methods of triangulation. Bearings were taken until the sleeping tree was identified. GPS coordinates were noted. If possible the tree species was identified, sleeping height,

weather, temperature, humidity and wind speed were recorded. The observer returned at the beginning of dusk, ascertained the sleeping position and tried to observe the animal directly after it started to be active.

All observations were noted ad libitum on prepared simple data sheets. Emphasis was put on the effort not to disturb the animal during the process of establishing a home range. If direct observation was not more possible or if the animal seemed to try to avoid the observer and to run away the observer retreated to allow the animal to settle down. The animal was not followed with the antenna and the receiver in the evening because this turned out to cause too much disturbance and noise due to the difficult terrain.

Animals showed first signs of habituation to the observers' presence after about one week of observation. Sightings lasted from several seconds to several hours. Efforts to follow the animals were strictly limited not to jeopardize the main goal of the release, the successful re-establishment in the wild.

From April 2002 onward the released animals were only monitored by telemetry and no longer directly observed. Data on their preferred habitat (sleeping sites), movements, the size of their range and their general ability to establish in the wild were continuously collected.

4. RESULTS

4.1 Observation Period

Data on the animals could be gathered between 0 days and four months. The animals are referred to by their EPRC studbook number.

Animal 12-13 and 12-24 (released 11.2000) were only followed by direct observation. They stayed in the release area for two weeks and after that they moved further away and were not seen any more.

Animal 12-28 (released 4.2001) disappeared on the day of release and there was never any signal of this animal. It is suspected that there was a problem with the radio-collar.

Animal 12-30 (released 4.2001) moved very fast out of the release area and into the National Park where it established a home range in a small valley behind the headquarters. It could be tracked for more than four months. After an onset of heavy rain there were no longer signals obtained and the valley was flooded in large parts. It is suspected that the animal might have moved deeper into the forest (data of this animal are not shown on the graphics)

Animal 12-29 (released 9.2001) explored a large territory around the release site. It crossed fences and electrical fences and finally established in one of the semi-wild enclosures of the rescue center. Unfortunately it fell obviously prey to a predator (marbled cat).

Animal 12-26 (released 10.2001) showed similar movements to animal five and finally established a home range on one of the large hills where it stayed for several months. After four months it was found dead without signs of a predator attack.

Animal 12-27 (released 11.2001) remained at the release site for a month and frequently returned to the food offered at the release site and then was found dead after a first onset of cold weather.

Animal 12-41 (released 3.2002) established a home range close to the release site. Sleeping in a bamboo in a height of only 3m it was killed by a predator one month after the release.

Animal 12-42 (released 3.2002) moved a while around the release area and then slowly moved away finally establishing a home range in a remote part of the botanic garden. It was tracked for four months.

Animal 12-46 (released 10.2002) lost the radiocollar on the third day after release. The radio collar showed lorises' gnaw marks and therefore a predator was not assumed to be the cause of the loss of he collar (no data shown on the map).

4.2 Locomotion

Most observations were made with the animal moving up or down in a vertical pattern. Other movements of the animal were running or slowly climbing along a branch quadrupedally above the branch. Whilst exploring the animal was often hanging only by the hind legs turning the upper half of the body in a pattern that it could overlook most of the surrounding.

Unexpectedly the animals liberally used the ground as substrate. Two different types of ground use were identified. Short visits to the ground without need and intention to cover any distance usually climbing up and down on the same tree. These trips occurred in dense forest or scrub areas with no grass coverage on the ground. The ground was also used to cover distances without suitable climbing substrate like trees or scrub. The animals crossed distances up to several hundred meters of open grassland without trees. And high an dense grass coverage. Before crossing an open area on the ground the animal visited the ground many times climbing up and down the tree from which the "crossing" was later started. Between these probably explorative visits to the ground it climbed up the tree again and was intensively observing the area that was to be crossed.

4.3 Sleeping sites

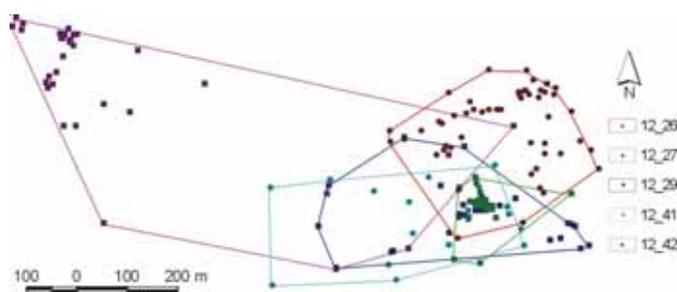
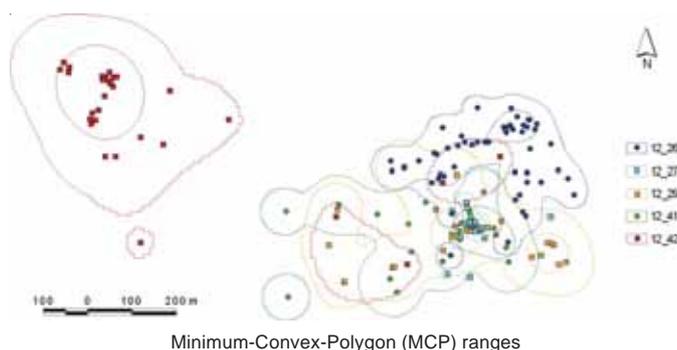
Ranges of sleeping sites

(Ranges are calculated as 95% and 50% Kernell Probability Plots, i.e. by a probability of 95% respective 50% the animal will be in the respective area.)

All animals slept occasionally in plantation trees but never far away from the edge of the forest. They frequently returned to the same sleeping site. Disturbance at the sleeping site during daytime (shaking the tree, grass cutting activity) caused the animals to leave this sleeping site and never return to it

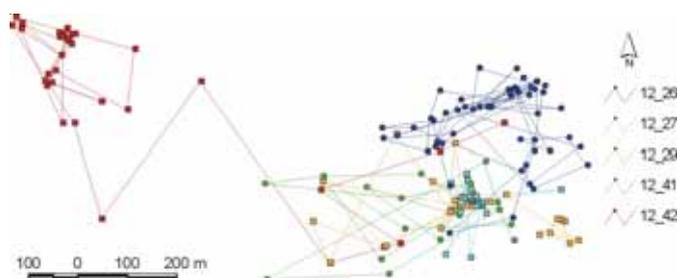
Distance between GPS reading of sleeping sites on successive days (travel path-length per night)

ID	Mean	sd	N (1 day difference)	min - max
26	113.1	67.2	50	5.8 – 277.6
27	52.6	52.0	30	0.0 – 174.7
29	107.0	78.0	21	7.2 – 289.6
41	116.9	92.0	22	0.0 – 261.1
42	96.3	83.9	19	0.0 – 239.3



Range sizes (ha) (area of 95% and 50% Kernell Home-ranges and Minimum Convex Polygons MCP)

Ind	95%	50%	MCP
26	8.8 ha	0.6 ha	8.3 ha
27	0.7 ha	0.1 ha	2.1 ha
29	13.8 ha	1.8 ha	8.4 ha
41	12.1 ha	1.2 ha	8.9 ha
42	20.2 ha	3.1 ha	26.4 ha



Distance between sleeping sites on two successive days

again.

Sleeping heights ranged from 3 to 25 metres with a preference for high sleeping sites.

The home range of the animals mostly measured around 10 ha. The distance between the sleeping sites in two subsequent nights ranged up to 250m.

4.4 Feeding

There were a total number of 27 feeding events observed. Several different types of feeding behaviour and food items were identified. In eleven cases the food item was recognized or suspected to be an insect, in eight cases it was gum, in eight cases it was not clearly identified plant exudate.

Insects:

Prey was searched for move slowly along branches with the nose close to the substrate. On nine occasions the animals caught insects. Insects were caught either using one or using both hands and then put in the mouth. On two occasions the animal caught an insect using both hands whilst clinging to a branch with both legs. In one case the captured insect was a moth attracted by the head torch of the observer. The most detailed observation of insect feeding was after one animal captured a very large cricket. The cricket was held with both hands and slowly eaten starting from the head. The hard skin was broken using the molars and by pushing the prey into the mouth with the hands. The skin was partly bitten off and the loris frequently got rid of excess parts of skin by fiercely shaking the head. The wings of the insects were bitten off and "disposed". Towards the end of the feeding session the animal changed the position two times, moving to another branch, whilst holding the remains of the insect in one hand. The seemingly very sticky inner contents of the insect finally covered the surrounding of the mouth and the hands of the loris and the animal spent several minutes grooming, concentrating on the hands by licking them intensively.

On one occasion the animal was observed licking on a branch of *Dracontomelum duperreanum* (Anacardiaceae). Whereas licking on branches in most cases was associated with feeding on plant items this case was different for the animal frequently interrupted feeding to abruptly shake its head. This might be a hint that the animal was feeding on ants, which attacked the intruding loris. The tree dwelling ant, which is very common in the release area, is very aggressive and has an -at least for humans- very unpleasant bite.

On another occasion the animal was observed feeding extensively in low scrub with climbing weeds. The food source was not identified, but later inspection of the scrub found all young shoots of the climber eaten off, which was possibly caused by an insect.

Feeding on insects was usually a short event only in two cases the loris seemingly found a number of insects in the same location and spent several minutes feeding on insects. However to eat the large cricket the animal required over twenty minutes. All feeding on insects occurred at heights less than ten meters.

Gum and other plant exudates:

Feeding on gum or other plant exudates comprised the majority of observed feeding events. The common feature was intense licking on a substrate without locomotion. The use of these food sources was accompanied in most cases by very audible sounds of scratching and breaking bark. Feeding on these plant substrates comprised short sessions only lasting one minute and extended sessions lasting up to twenty minutes in the same location.

Different animals were observed feeding at the same location, though on different nights. The animal released in spring fed on different tree species than the animals that were released later in the year. In spring the animals preferred *Saraca dives* (Fabaceae) as a food tree species. By that time the tree is also in full blossom and carries large bundles of big orange flowers that were inspected intensively on at least one

occasion. However it could not be ascertained if the animal actually found something to eat in the flowers. In this tree species licking on bark was never accompanied by audible scratching and bark breaking sounds, so possible food sources must have been rather on the surface and easily accessible. An interesting observation is that at least one of the three pygmy lorises that were observed in the National Park at that time of year was also found in a *Saraca dives* tree (Robertson, pers.com.). The animals released from September onward showed a strong feeding preference for *Spondias axillaris* (Anacardiaceae) trees. Here the food source could clearly be identified as gum during daytime (s. photo 1). The tree had an old injury and was visibly shedding gum. Feeding sessions on this tree were the most extended ones observed. A remarkable observation was that one animal returned to the same feeding site every time it had slept in the near vicinity. Whereas it seemed not to stick rigidly to the same routes through the vegetation it never failed to pass the "gum bar" when it was nearby. Scratching and bark breaking sounds were very intense.

Licking on branches, which was connected to feeding, was observed as well in a *Sapindus sp.* tree (Sapindaceae), a *Vernicia montana* tree (Euphorbiaceae) and at least two other non-identified tree species. All but one feeding event related to gum or other food exudates were observed at heights over eight metres.

Non-identified food sources:

A possibly but not clearly feeding related behaviour was observed in dense scrub areas without plants covering the soil and with reasonably good visibility in a height less than one meter due to lacking foliage. In these areas the animals frequently visited the ground for up to thirty seconds without actually covering any distance on the ground. Usually they went to the ground along the same tree, which they climbed up again after finishing the ground visit. It seems likely that these ground trips served a feeding purpose. Being not clearly identified as a feeding related behaviour these events were not counted amongst the feeding events.

Released Pygmy Lorises had seemingly no difficulties to readjust to the wild food sources. From the day of release onward they found and actively looked for natural food sources. They returned to once identified food sources. The observed feeding events were nearly equally shared between insects and vegetable food sources. Both food categories were readily exploited whenever encountered.

4.5 Social behaviour

Though animals of the same and different sexes were released in the same area there was never an encounter observed. Animals used the same sleeping trees but not on the same day and animals never established their range exactly in the same area. In one night extensive whistling contact between the released animal (animal 5) and the animals in the cages at the rescue center was observed. This resulted in a direct movement of the released animal towards the cage site and it was found sleeping only about 30 metres from the cage site the next day.

4.6 Death reasons

Predators killed two animals. Though this is considered a

natural cause of death it seems possible that the number of predator encounters was more frequent in the rather open area of the botanic garden than it would be in the primary forest. The canopy in the plantations is usually not closed like in the primary forest and animals might have to use the ground more frequently than they would have to in the primary forest.

In one of the remaining cases it seems possible that starvation was the reason for death. Pygmy Lorises occur all over Vietnam without showing any obvious phenotypical difference. Whilst animals in the North must develop specific behaviours to survive the winter season this might not be required for Southern Pygmy Lorises that do not encounter the same period of cold and food scarcity. Southern Pygmy Lorises that are able to adjust to the living in the wild in Northern Vietnam readily might be unable to react to a decrease in food availability. Animal 6 which died only five months after the release might be considered a victim of disease or starvation as well. Unfortunately the carcass was not accessible for a postmortal section.

5. CONCLUSIONS

Though probably less than fifty percent of their released lorises survived the study provides valuable information on the possibility to re-introduce pygmy lorises. Whilst identifying wild food sources seems to be no difficulty, adaptations to climatic changes might be a major obstacle for a release. Animals from different climates might not have the necessary knowledge to survive periods of cold and food scarcity in northern Vietnam. Food scarcity during the winter months might require exact knowledge of the area and the knowledge of reliable permanent food sources. The selection of a suitable time of release is essential for the animal's chances to survive.

If the released animals do not have sufficient predator avoiding skills or if the high occurrence of predator kills is a result of the habitat selection, can't be assessed at the moment. Taking into consideration present achievements and continuously collecting and evaluating data will be continued to further improve re-introduction of lorises.

Generally it has to be said that lorises are not easy to re-introduce and aspects learned from the project at Cuc Phuong National Park should be taken into consideration for any further releases of Pygmy Lorises in Vietnam.

ACKNOWLEDGEMENTS

The Embassy of Switzerland in Hanoi funded the first part of the study. The study could then be continued with the help of the Royal Society for Protection of Cruelty against Animals, UK. The management of Cuc Phuong National Park, particularly the Scientific Department, has been very supportive of this study and facilitated the work wherever possible. The evaluation of the telemetric data would not have been possibly without the assistance of Dr. Dietmar Zinner from the German Primate Institute.

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Reintro Redeux needs your help in redefining reintroduction activities in the region of South and East Asia. The following are the areas you can help:

1. Nominate people who have been involved in reintroduction activities in the region os South adn East Asia, along with addresses / email.
2. Send articles on reintroductions from exercises conducted, along with an assessment of thier successes and failures.
3. Send notes on various exercises conducted and called reintroduction, such as releases, introductions, etc. to help build a database of such activites within the region.
4. Contribute to the newsletter in other ways such as directing us to relevant web sites and articles published elsewhere.
5. Contribute to printing this newsletter and running this important network through donations.



IUCN SSC
Reintroduction Specialist Group
highlighted at the
CBSG Annual Meeting, Taipei, Taiwan - 2004



You would think that members of CBSG and RSG would get together very often and discuss problems and issues of mutual interest. Zoos -- at least until relatively recently -- have employed the model or theory of reintroduction of captive wild animals back to their natural habitat as one of their major conservation tools and contributions.

In recent years, this has definitely changed ...at least in western countries. Instead of getting involved in questionable or downright risky reintroduction or release projects, or even of undertaking a captive breeding programme of a species whose chance of reintroduction is shakey, zoos have instead elected to put an ever growing percentage of their funds, energy and staff time into field conservation projects of other types, such as provision of vehicles, tracking equipment, boots, raincoats, etc. for forest agencies in countries with unfavourable currency rates. The cost of a jeep anywhere can be very high but in some countries, it compares with what it would cost to erect a skyscraper in another country. Other field conservation projects that are funded by western zoos are field studies, education, various works with local people to minimise their impact on wildlife while improving their standard of living, research of various kinds, etc. The new World Zoo and Aquarium Conservation Strategy stresses the ways that zoos can contribute to conservation other than breeding for reintroduction in its theme "integrated conservation".

Yet reintroduction of wild animals into natural habitats -- in all its forms, benign introduction for conservation, translocation, supplementation, head starting, reintroduction, etc. -- is still a valid, and sometimes the ONLY conservation solution for extinction. While it is ineluctably true that it would be far better to save the species by saving habitat, and thus prevent the decline of wild populations before they become "small populations", the fact of the matter is that "we" -- meaning the whole conservation community throughout the world -- often have no control at all over the forces which result in habitat reduction, population decline and extinction. Often it happens before we even know there is a problem. And, just as often, it happens in full view - we know and know for a long time, yet simply can't do anything.

A basic concept of biodiversity conservation is that every species and subspecies is intrinsically of inestimable value, either potentially or actually. Saving species, then, is yet a major objective of conservation. The various faces of reintroduction can sometimes achieve this.

How much do zoos contribute to reintroduction then -- in terms of animals which actually go back to the wild ? Where do the animals in reintroduction projects come from ? These are some of the topics which came up in the first meeting of CBSG and RSG together. What do zoos need to do to contribute more and how can CBSG help them ?

Does reintroduction really work ? How do we know ? Do people follow the Guidelines of the RSG? Why and why not ? How can they be made to do so, if they don't ? The answers to these questions, more questions, and potential solutions for some problems and unwanted situations are all in this issue.

Sally Walker & Sanjay Molur
Representing CBSG & RSG in South Asia

Overview of reintroduction exercises in South and East Asia

Sanjay Molur and Sally Walker

As chairs of the recently established (December 2002) regional branch of the Reintroduction Specialist Group for South and East Asia, the following objectives have been identified by us for the region.

Identify re-introduction projects in the region: There have been many genuine reintroduction attempts in the region, and one of the first tasks has been to try and compile all of them along with their complete *modus operandi*.

Network re-introduction practitioners: All participants of reintroduction activities in South and East Asia will be identified and a database will be maintained.

Compile all releases till date: A number of agencies have released animals in the wild in the name of reintroduction. Having a list of such releases will be of use to evaluate them as per the guidelines of reintroduction and advise accordingly.

Segregate scientific/well planned and unscientific releases: Analysis of all projects under the above headings will help in drawing up position statements and action plans for evaluating future projects on the basis of the RSG guidelines.

Publish newsletter: A separate, web-based newsletter for the region will be published as frequently as possible to encourage projects to be highlighted as well as evaluate projects of their utility.

Conduct training/meetings: The concept of reintroduction is not a very well understood subject and we arrange training at any possible opportunity to people at various levels who are involved in any stage(s) of reintroductions. The annual meetings we have started are in themselves training. We also include reintroduction in our frequent field techniques training courses. Until date we have conducted a meeting with training component in Sri Lanka and another to be in Pakistan, 29-30 November 04. We had included Reintroduction in our February 04 training on field techniques for non-volant small mammals in Coimbatore, and will also do in the February 05 Bangladesh training for both volant and non-volant small mammals.

Typical exercises undertaken in the name of Reintroduction

The term reintroduction is often confused with the glamour it carries rather than the scientific method one has to follow to make it successful and potentially viable. In compiling the various projects within India, as a starting point, we came across a overwhelmingly large proportion of releases of animals and plants which were referred to as reintroduction but which did not meet any of the criteria for same. These are continuing at an alarming rate. Here we list a few instances of releases disguised as reintroductions for the following reasons:

Name and fame: This is a very common reason for planning a reintroduction. Many individuals have in the past (and some even now) have released animals with the intention of making a name and becoming famous within their capacities as officers in tenure or to prove a successful role in office. Some species that have suffered such release are lions and gibbons, among others. Such efforts are often characterised by poor research, no planning, short executive time and no follow up monitoring.

Excess stock release: Many zoos, universities and forest department deer parks in India have released excess stock of deer into nearby forests due to lack of space in the enclosures. Right reintroductions are planned from stage one and are never considered as part of excess stock release due to unplanned breeding of animals in captivity. Spotted deer is one the most common species released this way. Failures are due to: lack of breeding plans and space, diseased animals, and insufficient preparation

Animal welfare: A recent phenomenon in the country is to release laboratory animals into the wild without any scientific evaluation, by animal welfare organisations and NGOs. These are hazardous for both released animals and their conspecifics and others in the wild. Lack of scientific application, diseased and experimental animals, released in prime habitats, no monitoring are some typical scenarios.

Man-animal conflicts: This is a typical example of shifting problems by shifting problem-animals from one place to another. This is being done with the support of the various governments and the courts who do not understand the implications. Even more frightening are those who do understand the implications but are satisfied to move the problem away from their area. Primates and leopards are some examples. NGOs, courts, civic bodies, forest departments, zoos and animal welfare activists become involved due to political pressure.

Aforestation: Some okabts are released or planted without sufficient planning or study to increase green cover and to convert wastelands in the name of ecological restorations. Examples are Prosopis, Acacia, Eucalyptus, Wattle, Pine, etc. The problems include poor knowledge & application, lack of science, political motivation, emphasis on "easy" instead of appropriate species, etc.

Well meaning: Reintroductions in the past have been conducted for a variety of good reasons like saving species from extinction (gharial, mugger), to clean up rivers (freshwater turtles), etc. These exercises (also the recently conducted Red Panda release) conducted by forest departments, zoos, government, institutes, individuals and NGOs lack the overall needs of a successful reintroduction programme. Although temporarily satisfying the projects have setbacks due to the following reasons: need of the hour releases, not well financed, lack of long-term planning, monitoring & management, man-animal conflicts, etc.

Even though these examples are all from India, there are equally many or more from South East Asia, and for the same reasons.

Some well-planned reintroductions in the region include the following: *Rana taipehensis* frog in Taipei (in the planning stage), Gharial in India (done well to save the species, but not followed up, therefore partially successful. If nothing is done about it in future, the exercise will be a complete failure as the species might become extinct due to threats and lack of habitat), Romer's Tree Frog in Hong Kong, primates in Vietnam, Orangutans in Indonesia, etc.

Introduction to Reintroduction ... with a special emphasis on Captive Breeding

CBSG Annual Meeting Keynote address by Dr. Fred Launay, Chair, IUCN SSC Reintroduction Specialist Group

Reintroduction Specialist Group was founded in 1988. It's current organizational structure consists of a Chairman, Vice-Chair, Program Officer and various Regional and Taxon Section Chairs.

The RSG has over 300 members worldwide, an additional 200 subscribers on its mailing list and over 150 subscribers on its e-mail server site worldwide.

RSG activities are to :

- Review and comment on the technical aspects of re-introduction projects.
- Encourage governmental and non-governmental organizations to conduct viable re-introduction projects according to IUCN policy guidelines.
- Prepare and disseminate: newsletters, CD-ROM's, guidelines and policy statements.
- Maintain a viable international network to enable RSG to carry out its Mission.

RSG Products include :

- Policy Guidelines:
- IUCN Position Statement 1987.
- Re-introduction Guidelines (approved 1995 & printed 1998).
- Placement of Confiscated Animals (Approved 2000 & printed 2002).
- Taxon specific guidelines:
 - Primates (finalized 2002).
 - African Elephants (2003) in conjunction with the IUCN/SSC African Elephant Specialist Group.
 - Galliformes in conjunction with the World Pheasant Association (on-going).
- RSG newsletter, Re-introduction NEWS, a total of 23 issues since 1990.
- Re-introduction Practitioners Directory produced and distributed in 1998.
- RSG CD-ROM which contains all the groups newsletters
- RSG & SSC guidelines, policies and reports.
- RSG & SSC Strategic Plans and RSG Bibliography
- Database.
- Website <www.iucnsscrg.org> launched in August 2003 and has recorded over 3,154 hits.

"Re-introduction programs"

RSG terms...

- Introduction (IUCN, 1987)

- Re-introduction (IUCN, 1995)
- Re-enforcement / Supplementation (IUCN, 1995)
- Conservation Introduction (IUCN, 1995)
- Substitution (Seddon & Soorae, 1999)
- (Translocation: the movement of animals from one part of their range to another)

RSG Definition of terms...

- **Introduction** -- outside historic range "an intentional or accidental dispersal by a human agency of a living organism outside its historically known native range.

Potential to become invasive species. E.g. Nile perch-Lake Victoria, E Africa.

RSG: Definition of terms...

- **Introduction**



⇒ An intentional or accidental dispersal by human agency of a living organism outside its historically known native range. Potential to become invasive species. E.g. Nile perch into Lake Victoria, East Africa.

Re-introduction -- Historic Range -- No individuals at release site

"An attempt to establish a species in an area which was once part of its historical range but from which it has been extirpated or become extinct."

E.g. Arabian oryx in Oman & Saudi

RSG: Definition of terms...

- **Re-introduction**



⇒ An attempt to establish a species in an area which was once part of its historical range but from which it has been extirpated or become extinct. E.g. Arabian oryx in Oman & Saudi Arabia.

- **Re-enforcement / Supplementation - Historic range**
Some individuals at release site

Addition of individuals to an existing population of conspecifics e.g.

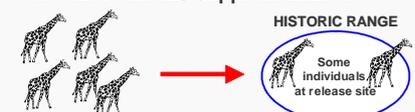
- to correct skewed sex ratios,

> improve genetic status.

This type of action is always risky as it poses a high risk to existing wild population from factors such as disease & genetic pollution. E.g. Formosan salmon in Taiwan.

RSG: Definition of terms...

- **Re-enforcement / Supplementation**



⇒ Addition of individuals to an existing population of conspecifics e.g. to correct skewed sex ratios, improve genetic status. This type of action is always risky as it poses a high risk to existing wild population from factors such as disease & genetic pollution. E.g. Formosan salmon in Taiwan.

Conservation Introduction -- Outside historic range

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. Common in New Zealand and Australia on offshore islands due to introduced predators on the mainland. E.g. Stick-nest rats and various skink species.

RSG: Definition of terms...

- **Conservation Introduction**

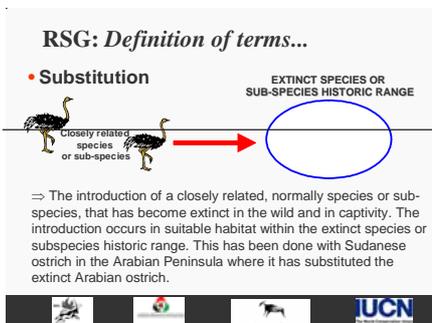


⇒ An attempt to establish a species for the purpose of conservation, outside its recorded distribution but within an appropriate habitat and eco-geographical area. This is a feasible conservation tool only when there is NO remaining area left within a species' historic range. Common in New Zealand and Australia on offshore islands due to introduced predators on the mainland. E.g. Stick-nest rats and various skink species.

Substitution -- Extinct Species or Sub-species Historic Range -- Closely related species or sub-species

- The introduction of a closely related, normally species or sub-species, that has become extinct in the wild and in captivity.
- The introduction occurs in suitable habitat within the extinct species or subspecies historic range. This has been done with Sudanese ostrich in the Arabian Peninsula where it has substituted the extinct Arabian ostrich.

Aim of a re-introduction...
The principle aim of a re-introduction should be to establish a viable, free-ranging population in the wild.



Main stages of a re-introduction project:

- Feasibility stage
- Implementations stage
- Post-release monitoring stage
- Dissemination of lessons learnt stage, whether successful or unsuccessful, as every attempt is an important result.

Feasibility Stage... This stage involves the gathering of data on habitat suitability, biological issues involving the species and on socio-political and economic concerns. If the project proves feasible it should proceed further. If there are concerns, then these should be addressed before proceeding further.

Choice of a re-introduction site

Re-introduction - historic range of species and there should be no remnant population to:

- prevent disease spread,
- social disruption, and
- introduction of alien genes.

Habitat ...

- Choice of a re-introduction site:

Re-introduction - historic range of species and there should be no remnant population to:

- prevent disease spread,
- social disruption, and,
- introduction of alien genes.

- Re-enforcement - few remnant wild individuals.

Habitat...

- Evaluation of re-introduction site:
 > Re-introduction should only take place where habitat and landscape

requirements of the species are satisfied and changes since extirpation have been considered.

> The area should have a sufficient carrying capacity to support a viable, self-sustaining population.

> The original cause of decline must be identified and eliminated or reduced to a sufficient level.

Habitat ...

- Habitat Restoration

> If the release site has undergone a substantial degradation then a habitat restoration must be carried out before a re-introduction can proceed.

Species...

- Feasibility Study & Background Research
- Taxonomic and genetic status must be evaluated.
- Detailed studies on the status and biology of wild populations must be undertaken.
- Effect of species to be re-introduced, or one that has filled the void must be evaluated.
- Modeling and a PHVA to guide long-term population management is essential.

Species...

- Stock for Re-introduction
- Wild stock is preferred but if from a captive source it must have been managed demographically and genetically.
- Re-introductions should not be carried out merely because of the availability of surplus stocks.
- Stock destined for a re-introduction must meet all necessary health requirements.
- A captive-bred stocks probability of survival must approximate that of a wild counterpart.

Socio-economic & Political...

- Financial and Political Support
- Re-introductions are long-term, expensive projects that require long-term financial and political support.
- Socio-economic studies should be conducted to assess impacts, costs and benefits to local communities.
- If human activities pose a risk then adequate measures should be undertaken, if inadequate, then alternative release area should be sought and the attempt abandoned.

Socio-economic & Political...

- Policies & Migratory Species
- Country re-introduction policies should be assessed e.g. existing provincial, national and international policies.
- Full permission and involvement of all relevant government agencies. Re-introductions can occur in border areas, or where species can expand into states, provinces, or other territories.

Implementation stage

- Approval of relevant government agencies, land owners, NGO's (both local and international) and of a multidisciplinary team established to oversee the project.
- Identify both short- and long-term indicators.
- Secure funding for all phases of project.
- Project to be done as a carefully designed scientific experiment.
- Ensure all veterinary protocols are in place.
- Welfare of animals should be of high concern during all stages of the project.

Post-release monitoring stage

- This is the most important stage because without post-release monitoring the success indicators cannot be evaluated.
- Done by monitoring all or a sample using direct (e.g. tags, telemetry) or indirect (e.g. spoor, informants, calls, etc.).
- Long-term studies on adaptation, ecology and behaviors should be undertaken.
- Mortalities should be thoroughly investigated.

Dissemination of lessons learnt stage

Lessons learnt Stage...

- Results of projects, whether successful or not, should be published in scientific and popular literature.
- Future proposed projects should learn from past successes and failures to help develop their own strategies.
- A cost-benefit analysis should be carried out of the project.
- Public relation activities and dissemination of information through the mass media.

“Re-introductions and captive-breeding /zoo community”

RSG: from Re-introductions Practitioners Directory

Reptile & Amphibian re-introductions...

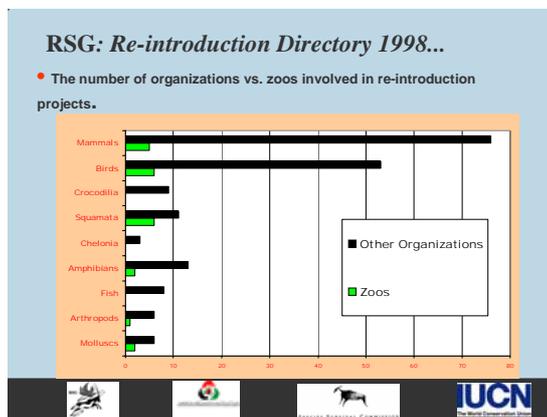
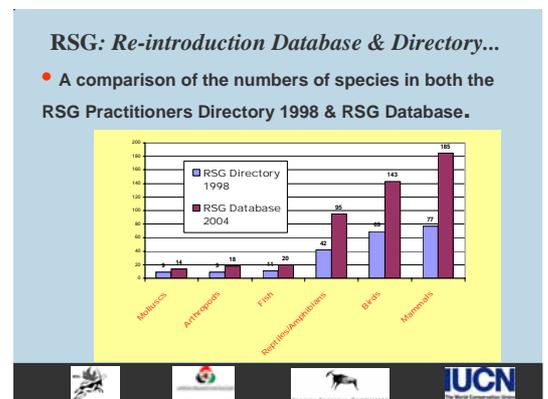
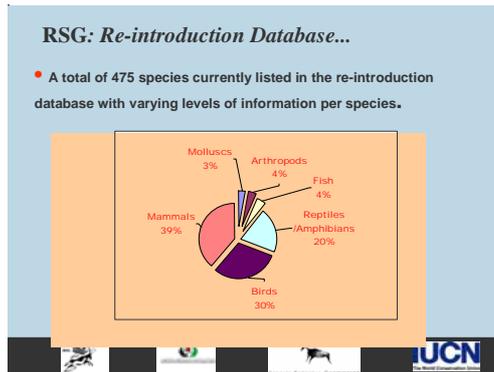
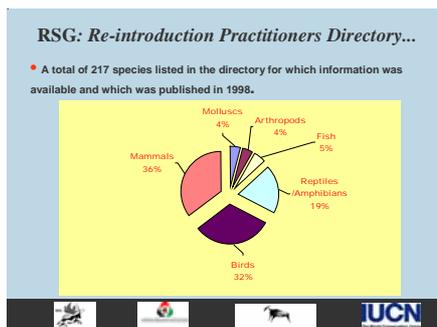
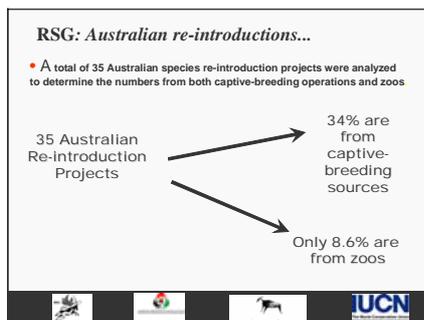
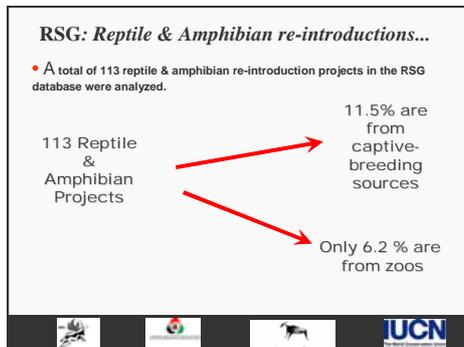
A total of 113 reptile & amphibian re-introduction projects in the RSG database were analyzed.

- 113 Reptile & Amphibian Projects
- 11.5% are from captive-breeding sources
- Only 6.2 % are from zoos

Australian re-introductions...

A total of 35 Australian species re-introduction projects were analyzed to determine the numbers from both captive-breeding operations and zoos.

- 35 Australian Re-introduction Projects
- 34% are from captive-breeding sources
- Only 8.6% are from zoos



Conclusion... Re-introduction is a complex process and is not only about releasing animals into the wild.

- The most important phase of any re-introduction project is the feasibility stage.
- The participation of the zoo community in re-introduction projects for conservation could be greatly enhanced.

Reintroduction Working Group Reports

The Reintroduction working group had a joint brain storming session generating issues related to working group topics to decide if it was possible and advantageous to have one working group or we should split in more groups.

Issues generated

1. Are there any existing benchmarks for success – captive versus wild animals?
2. Should the Zoo community be more actively engaged?
3. How to prepare captive bred animals to maximise post release survival?
4. What are the other sources for captive bred animals? Can we utilise other institutions in reintroduction?
5. How do you choose the best site?
6. Sanctuary capacity – can primate releases from sanctuaries adequately satisfy RSG guidelines?
7. What to do with urban primates? Rescued animals?
8. What to do with surplus zoo animals?
9. At what point do you consider captured animals as captive/wild? What is a release/reintroduction? (Snail - Vietnam)?
10. At what time would you consider releasing animals within their historic range?
11. When do you evaluate? How often? Time/issues?
12. Conservation vs commercial utilisation/sale. Is sustainable commercial utilisation acceptable within the context of reintroduction?
13. What to do with circus animals?
14. Is commercial utilisation an appropriate way to achieve reintroduction?
15. Eco-tourism – should there be generic guidelines for reintroduced animals or project specific?
16. How long do you continue post release monitoring – how do you factor in the monitoring in the planning?
17. When does a reintroduction programme become a reintroduction programme? How do you get legal endorsement of a scientific/proper reintroduction project?
18. How do we get the message about appropriate reintroduction methodologies?
19. Are there ways to shorten the reintroduction process to satisfy government requirements?
20. Should conservation breeding for reintroduction be a zoo priority?
21. What would trigger a zoo to embark on a reintroduction project?
22. How do we measure success? When do we stop releasing animals?

Issue consolidating

- A. Commercial utilisation
- B. Evaluating success
- C. Surplus animals
- D. Source issues
- E. Planning issues
- F. Following guidelines
- G. Role of zoos/non-traditional breeding centres
- H. Communication

Issue number

- 12, 14, 15
- 1, 11, 16, 22
- 6, 7, 8, 13
- 4, 9
- 3, 5, 10, 11, 16, 22
- 5, 6, 15, 19
- 2, 4, 20, 21
- 17, 18, 19

Group split and issues

Because of the diversity of issues and the large group of people it was decided to split into two working groups that each would cover the following of the issues above:

Group 1: B + E + F + H

Group 2: A + C + D + G

Reintroduction Working Group 1 Report

Participants: *Mie-Hsiu Hwang, Joe J. C. Guo, Chang Lin, K. Y. Lue, Jason S. C. Chin, Hang Lee, Bart Hiddinga, Tilo Nadler, Willie Labuschagne, David Lucas (flip-chart recorder), Nan Schaffer (presenter), David Reed, Fred Launay (facilitator), Akira Murayama, M. Nael Abu Zeid, Frands Carlsen (recorder), Holly Hunt, Mark Craig, Greg Geise*

The group started discussing the very diverse topics identified during the issue generation process, trying to prioritise them and reached the conclusion that it would not be possible to produce a valuable set of objectives and action steps on such a set of diverse and very specific problems in the relatively short time during the working group sessions. There was consensus in the group that focusing on the reintroduction guidelines and the way they are followed (or not) would cover a lot of the ground in the initial brain-storming topics.

Clarification:

Starting point of reintroduction guidelines is the reintroduction area not the source. Other guidelines exist for e.g. rehabilitation, but they are not the same. From RSG point of view you got a piece of land you want to introduce animals to and then you look for appropriate animals for reintroduction. This is opposed to surplus situation where there is a source and the possibility for reintroduction is looked into for different purposes. From RSG point of view reintroduction is solely for conservation purposes. The guidelines are adopted as the official IUCN statement on reintroduction. They are also adopted by some countries as their official policy on reintroduction. It is first here that they are legally binding. The confiscation and rehabilitation guidelines are adopted by CITES.

Problem statement

There are many reintroduction projects where practitioners do not follow guidelines resulting in a large rate of failure or risk of failure. The problem can be split into:

1. Stakeholders not knowing the guidelines
2. Stakeholders knowing the guidelines but not wanting to follow them
3. Stakeholders knowing the guidelines but unable to follow them

How do we make sure that the RSG guidelines are available to all interest groups, landowners, governments, NGOs, captive breeding institutions? How do we make sure they are implemented? How far do you follow the guidelines? What are the difficulties? How can they be addressed?

Who are the stakeholders?

- Policy makers
- GOs; UN; National, regional, Provincial, local
- NGOs: IUCN, Members, SGs, WWF etc., Animal Welfare organisations;
- Relevant scientific fields;
- Reintroduction practitioners;
- Animal providers -- Zoos, Private individuals, Nature reserves
- Landowners

1. Stakeholders do not know the guidelines: Why?

- Not referred to by academic field
- Not part of government policies
- RSG – limited distribution of guidelines?
- Not disseminated into more specialised groups, vets etc.
- Not aware of the complexities of reintroductions and thus not looking for information
- Lack of communication between IUCN specialist groups
- Native language problems (not enough translations)

Objectives

- More efficient dissemination of guidelines (more targeted, translations)
- Wider distribution of the guidelines (send to more people)
- Increasing the awareness and importance about the nature/complexity of reintroductions.
- More RSG members

Actions

- Action: Direct mail of guidelines + cover letter (regular circulations) that explains the issues related to reintroductions.
- Target: IUCN members, reintroduction practitioners
- Who:RSG
- Timeframe: 18 months, ongoing
- Action: Identify need for more translations via request through RSG listserve
- Target: RSG listserve members
- Who:RSG
- Timeframe: as requested
- Action: Make available more translations for other language areas
- Target: Countries not covered by present translations
- Who:RSG
- Action: Produce feature article
- Target: Professional, specialist publications
- Who:RSG
- Timeframe: Ongoing
- Action: Workshops
- Target: All stakeholders
- Who:RSG
- Timeframe: ongoing
- Action: Link with other NGOs' websites
- Target: NGOs
- Who:RSG
- Timeframe: ongoing
- Action: Improved marketability (incorporate examples, case studies etc. into guidelines)

- Target: All stakeholders
- Who: RSG
- Timeframe: as funding source has been identified, as soon as possible
- Action: Promote adoption of guidelines by zoo associations and other relevant professional associations
- Target: Associations
- Who: RSG
- Action: Make available PPT. presentation, covering issues in feature article, on website
- Target: All stakeholders
- Who: RSG

2. People know the guidelines but don't want to follow them. Why?

- Lack of understanding
- Time consuming – too cumbersome
- Too costly to follow
- Territoriality issues, not wanting rules to be imposed, personal/institutional agendas
- Conflicting priorities (e.g. surplus)
- Not deemed appropriate for some species

Objectives

- Policies of reintroduction established at national government level/international convention
- Demonstrate effectiveness of guidelines

Actions

- Action: Convey the costs of not following guidelines (using review analysis results)
- Target: Practitioners and other stakeholders
- Who:RSG
- Action: Analyse the impact of reintroduction programmes
- Target: -
- Who:RSG
- Action: Review effectiveness of guidelines and implement possible changes
- Target:
- Who:RSG
- Timeframe: 4 years, by RSG + committee to create on behalf of RSG
- Action: Review existing government policies and international conventions
- Target: IUCN members (state level)
- Who: RSG request, Mark Craig (for Australia)
- RSG to IUCN members + IUCN Environment Law Centre + specific

individuals, 12 months

3. People know the guidelines but have trouble following guidelines. Why ?

- Financial problems
- Political objections/obstruction or non motivation
- Legal aspects
- Time limits
- Logistics problems
- Lack of support by community
- Lack of knowledge and expertise level
- Guidelines are thought of as "all or nothing "
- Not enough details
- Guidelines non-applicable to a specific project

Objectives

- Make guidelines more practical

Actions

- Action: Identify different level of importance of elements in the guidelines
- Help to understand the complexity of reintroduction projects
- Make the guidelines easier to read, to understand ; use examples
- Who: RSG
- Action: Develop a manual for reintroduction, electronic with follow-up and interactive work
- Who : RSG + CBSG + practitioners - specific work : RSG to write a background
- Action: Develop a directory of regional advisors
- Who: RSG
- Action: Develop taxon/environment specific guidelines
- Who: RSG, relevant specialist groups when need/request arise

Immediate recommendations:

Subgroup will formulate a set of recommendations for WAZA and regional zoo associations to adopt reintroduction guidelines and bring this forward to the WAZA meeting.

Who: Fred Launay, Sanjay Molur, Fiona Fiskien, Nan Schaffer and others

Reintroduction Working Group 2 Report

Reuben Ngwenya, NZG, South Africa, Ying Wang, Taipei, Taiwan, Fiona Fiskén, ZSL London, UK, Bjarne Klausen, Odense Zoo, Denmark, Parntep Ratanakorn, ZPO, Thailand, Karnchai Saenwong, Chaingmai Zoo, Thailand, Sumate Kamolnorrath, ZPO, Thailand, Evan Blumer, The Wilds/Columbus Zoo, USA, Hamish Currie, Back to Africa, South Africa, Dr Brij Raj Sharma, Central Zoo Authority, India, Sanjay Molur, (flip chart recorder) Z.O.O., Coimbatore, India, Devra Kleiman (facilitator), Fiona Fiskén (computer recorder), Zoological Society of London, London.

DAY 1

- A. Commercial Utilization (12, 14, 15)
- C. Surplus Animals (6, 7, 8, 13)
- D. Source Issues (4, 9)
- G. Role of Zoos/Non-traditional Breeding Ctrs (2, 4, 20, 21)

A. Commercial Utilization (12, 14, 15)

12. Conservation vs Commercial Utilization/Sale.

Is sustainable commercial utilization acceptable to zoos within the context of reintroduction?

14. Is commercial utilization an appropriate way to achieve reintroduction?

15. Should there be generic guidelines about ecotourism and reintroduction?

C. Surplus Animals (6, 7, 8, 13)

6. Can primate releases from sanctuaries adequately satisfy RSG Guidelines?

7. What to do with urban/rescued animals?

8. What to do with surplus zoo animals?

13. What to do with circus animals?

D. Source Issues (4, 9)

4. What are the other sources for captive bred animals? Can we utilize other institutions (non traditional) in reintroduction?

9. At what point do you considered captured animals as captive/wild?

G. Role of Zoos/Non-traditional Breeding Centres (2, 4, 20, 21)

2. Should the zoo community be more actively engaged in reintroduction?

4. What are the other sources for captive bred animals? Can we utilize other institutions (non traditional) in reintroduction?

20. Should conservation breeding for reintroduction be a zoo priority?

21. What would trigger the zoo to embark on a reintroduction project?

DAY 2 Session 1. (Discussion of D & G first two half hours)

i. Should zoos be more involved? YES

Captive breeding can be increased and the genetic stock provided can be good. Zoos can provide the stock but can they be totally responsible for the follow-up studies and monitoring (staff time, cost, etc)?

*ii. How should zoos be involved with reintroduction (conservation breeding, fund-raising, partners, governments, networks)? YES but how?

*iii. How to help zoos develop conservation breeding progs for reintro? Zoos have to follow IUCN guidelines. Zoos should be more involved as long as they should follow IUCN guidelines and they should be involved from the first stage of planning onwards.

iv. Need to have baseline and metrics to measure improvement in success? [Talk to other group and see if they are addressing evaluation of these data.]

INCREASE IN THE ROLE OF ZOOS IN REINTRODUCTION CAN ONLY BE MEASURED WHEN MORE ACCURATE METRICS CAN BE ESTABLISHED FOR CURRENT BASELINE OF INVOLVEMENT.

*v. How can non-traditional zool. facilities be better utilized both to increase the magnitude of captive-source animals for reintroduction, and provide individuals that are better adapted to the rigors of release.

vi. At what point do you consider a wild-born animal a captive animal ?

[NOTES: Only small percentage of source animals for reintroduction programmes from zoos. Many from Government programs, University programs. Semantics may be the problem with understanding of Fred's data.

What should be considered zoo source and what should not? Increasing levels of off-display animals being put forward to reintroduction programmes. Are these zoo or not? Do we care? Is it necessary to define this? In South Africa there are animal traders and they could be a source for animals for reintro. In Thailand there are also zoo owned land with animals that are not on display. Zoos could utilize their own animals for reintroduction. Worry about zoos doing non-appropriate reintroduction

If in fact there is a goal to encourage zoos to be more involved in (re)introduction then should the data be reanalyzed? To measure improvement/success we need to have a baseline and metrics.

Zoos should be more involved as long as they should follow IUCN guidelines and they should be involved from the first stage of planning onwards.

Bodies that begin reintroduction programmes (governments) may not contact zoos when they begin this process. They may not know that zoos are willing to get involved. Does every zoo understand and utilize IUCN guidelines? There is a communication issue here.]

(Discussion C third half hour)

WHAT ARE THE SOURCES OF SURPLUS ANIMALS?

*Urban wildlife, human/animal conflict

* Circus animals

*Confiscated/illegal animals

*Reckless breeding (both zoo and non-zoo/commercial)

Rescued/orphan animals

Experimental/lab animals

INDIGENOUS (pure/hybrid: genetics)

same as above

EXOTIC (pure/hybrid: genetics)

Circus animals

Confiscated/illegal animals

Reckless breeding (both zoo and non-zoo/commercial)

Experimental/lab animals

What does this group want to do to address the surplus animals issue? Three sources will be addressed

6. Genetics a problem as they don't know the source of these animals.

7, 8, 13. What to do with urban animals (could be 1000 monkeys) ? Surplus zoo animals can be phased out with breeding controls. It is the unplanned (urban/circus) animals that are brought into the zoos that are the problem?

(Discussion A last half hour)

15. Ecotourism is a policy issue should we address this issue? Ecotourism is utilization.

What are the ways in which commercial utilization issues will affect reintroduction?

* Are commercial venues appropriate for recipient sites?

What is acceptable/non-acceptable commercial utilization

A. (Private) Commercial venues: (1) consumptive / (2) non-consumptive

B. Commercial sales: (1) native / (2) non-native

DAY 2 Session 2

iv. Need to have baseline and metrics to measure improvement in success?

(1) Reanalysis of data (presented by Fred L.)

(2) Generate new analysis using a new database identifying the specifics of current zoo involvement

(3) RSG & CBSG work together

*** ACTION STEPS RECOMMENDED**

* ii. How should zoos be involved with reintroduction (conservation breeding, fund-raising, partners, governments, networks)? YES but how?

(1) Encourage zoos to partner more broadly with conservation NGOs, governments, stakeholders

(2) educate zoo managers about different ways in which zoos can be involved and encourage zoo staff to travel to reintroduction areas/projects

(3) make animals available, budget for transportation costs (where possible) and provide husbandry, veterinary & technical expertise

(4) educate public and decision makers that are external to the zoo about reintroduction .

* iii. How to help zoos develop conservation breeding programs for reintro? Zoos have to follow IUCN guidelines. Zoos should be more involved as long as they should follow IUCN guidelines and they should be involved from the first stage of planning onwards. Regional CBSG networks and regional/national associations could be utilized to

(1) discuss and explain the information in the IUCN Guidelines to zoos so they can focus on guidelines as a tool for planning

(2) run training programmes / workshops for zoos

(3) print the information on the RSG CD of all guidelines and newsletters and distribute it to all their members

(4) communicate with national government conservation authorities

*v. How can non-traditional zoological facilities be better utilized both to increase the magnitude of captive-source animals for reintroduction, and provide individuals that are better adapted to the rigors of release.

What can non-traditional zoological facilities do to be more effective in reintroduction?

If enough technology, resources, finance, etc., available then non-traditional non-range zoological facilities could be used as the training ground for animals (some training, acclimation, adaptation: things that are in conflict with display).

***ACTION STEPS RECOMMENDED**

What are we to do with surplus animals from:

*Urban wildlife, human/animal conflict

This issue should only be addressed in situations where human/animal conflict cases have direct involvement of local or regional zoos.

- euthanasia (in some places)
- 'management until death' of the surplus
- establish support/retirement facilities, where appropriate
- reintroduction/re-enforcement according to RSG Guidelines, where appropriate
- place the animals in research projects (e.g. preparing for release)
- incorporate into managed breeding programmes

*Confiscated/illegal animals

Depending on taxonomic groups it may be recommended to release confiscated animals in as short a time as possible if the RSG Guidelines are followed.

- euthanasia (in some places)
- 'management until death' of the surplus
- establish support/retirement facilities, where appropriate
- reintroduction/re-enforcement according to RSG Guidelines, where appropriate
- place the animals in research projects (e.g. preparing for release)
- incorporate into managed breeding programmes

*Excess breeding (both zoo and non-zoo/commercial)

To whatever degree we can we should encourage zoos to work with partners, to breed animals responsibly, and within RSG Guidelines.

Reproductive management should be improved to prevent surplus

Surplus animals in zoos should not be released just because they are surplus.

- euthanasia (in some places)
- 'management until death' of the surplus
- establish support/retirement facilities, where appropriate
- reintroduction/re-enforcement according to RSG Guidelines, where appropriate
- place the animals in research projects (e.g. preparing for release)

***ACTION STEPS RECOMMENDED**

* Are commercial venues appropriate for recipient sites?

What is acceptable/non-acceptable commercial utilization?

A. (Private) Commercial venues:

- (1) consumptive should be avoided.
- (2) non-consumptive should be encouraged (assuming native species)

B. Commercial sales venues:

- (1) native
- (2) non-native

Only discussing native animals within their historic range.

Do not agree to supply animals to areas where they may be hunted in the short term (commercial venues / game farms).

Reintroduction programmes may end up with populations that need to be harvested eventually.

Commercial sales venues may be supplied with animals as long as there is a legal contract that excludes sale of animal and first-generation progeny and establishes a sustainable population without further reintroductions.

Reintroduction programmes may end up with sustainable populations from which some are eventually sold.

PRESENTATION (DAY 3)

Here are the SMART-specific recommendations of this working group's discussions.

ACTION STEPS FOR IMPROVING THE INTEGRATION OF CAPTIVE-BREEDING PROGRAMMES WITH REINTRODUCTION PROGRAMMES FOR CONSERVATION

(1) Communicate working group recommendations/actions steps to WAZA, RSG and all regional associations and/or national zoological authorities (within 6 months)

(2) Within 2 years formation of reintroduction advisory groups (including a main liaison to the RSG) within each regional association and/or national zoological authority. Including:

- Distribution of all RSG materials to all member zoos within each regional/national zoo association
- Distribution of CBSG materials to all member zoos within each regional/national zoo association

(3) A regional member of CBSG should be a member of RSG

(4) Within 2 years every regional association and/or national zoological authority should have a training workshop on and with RSG (with academic community, conservation NGOs and governments, as well as zoo communities)

5) Within 2 years each regional association and/or national

zoological authority should have a symposium about reintroduction at their annual meeting (with academic community, conservation NGOs and governments, as well as zoo communities)

(6) Encourage the reintroduction advisory group within the regional associations and/or national zoo authority to work with RSG to clarify the involvement of zoos and captive breeding facilities in reintroduction programmes

(1) Reanalysis of data (presented by Fred L.)

(2) Generate new analysis using a new database identifying the specifics of current zoo involvement

(3) RSG & CBSG work together

RECOMMENDATIONS FROM CBSG RSG WORKING GROUPS TO WAZA, 29-31 October 2004, Taipei, Taiwan

Reintroduction was the theme of this year's CBSG meeting in Taipei with the participation of the IUCN/SSC Reintroduction Specialist Group. Two working groups were formed. One group discussed the RSG Reintroduction Guidelines and their implementation, and the second group discussed the role of zoos and their increased involvement in reintroduction projects.

The general consensus was that the RSG Reintroduction Guidelines were useful and would improve the quality of reintroduction projects if followed but it was also felt that their distribution and awareness about them was still insufficient within the zoo community and zoo-governing organizations.

The other conclusion was that the zoo community could and should be more involved in reintroduction projects not only by providing animals but also by providing veterinary/husbandry skills, funding, technical expertise and training.

(1) We would recommend that RSG, CBSG and WAZA cooperate in circulating the RSG Guidelines to all WAZA members.

(2) CBSG and RSG encourage WAZA to adopt the RSG Reintroduction Guidelines formally as part of their "Code of Ethics and Welfare" (EAZA, ARAZPA and SAZARC have already done this).

RSG Members -- Past, Present, Future

Chellam, Ravi, India
 Agoramoorthy, Govindasamy, Taiwan
 Chong, Mike H.N., Malaysia
 De Silva, Anslem, Sri Lanka
 De Veyra, Rhodora R, Philippines
 Henshaw, John, Thailand
 Huffman, Michael Alan, Japan
 Kim, Yong-Shik, Korea, Republic of
 Menon, Vivek, India
 Molur, Sanjay, India
 Murata, Koichi, Japan
 Narayan, N Goutam, India
 Rahmani, Asad Rafi, India
 Ramlee, Mohd. Hatta Mohd, Malaysia
 Rao, R. J., India
 Santiapillai, Charles, Sri Lanka
 Sharma, Indra Kumar, India

Sinha, Satya Priya, India
 Sodhi, Navjot, Singapore
 Suh, Jung-Soo, Korea, Republic of
 Walker, Sally, India
 Won, Changman, Korea, Republic of
 Wu, Hsiang-Chien, Taiwan, CN

Proposed New Members

Brij Raj Sharma, MS CZA, India
 A.Q. Mehal, Pakistan
 Uzma Khan, Cons. Biol., WWF
 Salman Rajesh, India
 Hua-Ching Lin, Taipei
 Harry Andrews, India
 Rom Whitaker, India
 Anwar Islam, Bangladesh
 M.M. Feeroz, Bangladesh

Rohan Pethiyagoda, Sri Lanka
 Shomita Mukherjee, India
 Vidhya Atreya, India
 Rajesh Gopal, Dir. Project Tiger, India
 Manoj Mishra, India
 S.P. Sinha, India
 Mewa Singh, India
 Tilo Nadler, Vietman
 B.C. Choudhury
 Ian Singleton, Indonesia
 Ulrich Streicher, Vietnam
 and others (we request suggestions/
 nominations along with a c.v.)

