

NATIONAL STUDBOOK

Nilgiri Langur (*Trachypithecus johnii*): III Edition

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केन्द्रीय चिड़ियाघर प्राधिकरण
Central Zoo Authority

National Studbook of Nilgiri Langur (*Trachypithecus johnii*) III Edition

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FOREWORD

Nilgiri langur is a species inhabiting evergreen rain forests in the Western-Ghats of India. The species is threatened by habitat loss, fragmentation and degradation coupled with poaching. Efforts are underway to conserve the species in its natural habitat; however, continuing threats necessitate the need for effective ex-situ conservation of the species. Scientific management based on pedigree information contained in the studbook forms an appropriate tool for ensuring their long term genetic viability and demographic stability.

The Central Zoo Authority (CZA) in collaboration with zoos in India has initiated a conservation breeding program for threatened species in Indian zoos. As a part of this endeavor a Memorandum of Understanding has been signed with the Wildlife Institute of India for compilation and update of studbooks of identified species in Indian zoos.

As part of the project outcomes the WII has compiled the studbook of Nilgiri langur (*Trachypithecus johnii*) III edition in Indian zoos. The recommendations contained in the studbook will form the basis for the long term management of the species in captivity. It is hoped that the zoos will adopt the recommendations and keep the WII informed of changes in their populations on a regular basis to enable the timely update of the studbook.

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Nehru Zoological Park, Hyderabad
Sakkarbaug Zoo, Junagadh
Sri Chamarajendra Zoological Garden, Mysore
Thiruvanthapuram Zoo, Thiruvanthapuram

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NILGIRI LANGUR

(*Trachypithecus johnii*)

Species Information

Nilgiri langurs belong to a large group of leaf eating primates (Sub-family *Colobinae*) inhabiting south-Asia. Colobines are uniquely adapted to folivory being capable to ferment the leaves in their fore-gut. The species is endemic to Western-Ghats in south-west India.

Taxonomy

Phylum	Chordata
Sub-phylum	Vertebrata
Class	Mammalia
Order	Primates
Family	Cercopithecidae
Sub-family	Colobinae
Genus	<i>Trachypithecus</i>
Species	<i>Trachypithecus johnii</i> (J. Fischer, 1829)

The systematic classification of the species has been debated for long and the generic level classification has undergone several revisions. It was initially described by Fischer (1829) and placed in the genus *Cercopithecus* based on morphological features. Subsequently Blanford (1888 – 91) reassigned the genus to *Semnopithecus* based on similarities with Hanuman langurs. Hill (1939) placed leaf monkeys in four genera namely *Presbytis*, (*melalophos* and its relatives); *Semnopithecus* (the single species *entellus*); *Trachypithecus* (*phayrei*, *francoisi* and their relatives); and *Kasi*, (*johnii* and *vetulus*). The genus *Kasi* was renamed as *Trachypithecus* by Eudey (1987) and Nowak (1991).

Based on morphological similarities such as; cranial morphology, neonate pelage colour, and sexually dichromatic pubic integument; between Nilgiri, purple-faced langurs and genus *Trachypithecus*, along with rest of the south-east Asian leaf monkeys (Groves 2001) recognized *Semnopithecus* as a monotypic genus, containing *Semnopithecus entellus* while placing the remaining species in the genus *Trachypithecus* along with other leaf monkeys of Southeast Asia.

Two independent migrations/ disjunct distribution of colobines into the Indian subcontinent, one of the wet forest species (southeast Asian leaf monkeys and Nilgiri and purple-faced langurs) and the other of

the dry zone species (Hanuman langurs) based on phylogenetic placement (Karanth *et al.* 2008) have been reported. Relatedness of the two of the wet-forest species (Nilgiri and purple-faced langurs) to *Semnopithecus* suggests convergence of morphological characters in Nilgiri and purple-faced langurs with *Trachypithecus* i.e. independent evolution of the morphological characters similar to *Trachypithecus* in these two species.

Based on molecular data, Zhang and Ryder (1998) supported the common origin of Hanuman langur, Nilgiri langur, and purple-faced langur, excluding the leaf monkeys. Further to this, Brandon-Jones *et al.* (2004) placed Nilgiri and purple-faced langurs in the genus *Semnopithecus* along with Hanuman langur suggesting close relationship among the langurs of the Indian subcontinent excluding the Southeast Asian leaf monkeys. Molecular phylogenetic studies on langurs by Karanth *et al.* (2008) and Karanth (2010) also suggest a close relationship among the langurs of Indian subcontinent (Hanuman, Nilgiri, and purple-faced langurs) leading to their being classified in the genus *Semnopithecus*. These studies suggest the placement of the members of the Indian clade in the genus *Semnopithecus* (confined to the Indian subcontinent) whereas those in Southeast Asian clade in the genus *Trachypithecus*.

The species is however, listed as *Trachypithecus johnii* by 'The Global Biodiversity Information Facility' and the same name has also been used by Singh *et al.* (2008), for its inclusion in 'The IUCN Red List of Threatened Species. Version 2014.3'. The current edition of the studbook accordingly has used the same name for naming the species.

Morphology

Hair of the crown and sides of the head is long and light brown with a tint of yellow in colour. Body is covered by long glossy fur, black to dark brown in colour. A cream patch on the inside of each thigh distinguishes females (Blanford 1988 – 91). The young are red-brown in colour that darkens and has a full adult colouration by 4-5 months (Poirier 1968a).

Table 1: Morphometrics of Nilgiri langur*

Characteristics	Range	
	Male	Female
Body length	78 cm	58.5 cm
Tail length	68.5 – 96.5 cm	
Body weight	9.1 – 13.2 kg	10.9 – 11.3 kg

* Source: Grizmek's Encyclopaedia of Mammals Vol. II (1990)

Habitat and ecology

The species inhabits a variety of forest types from 300 to 2,000 m in elevation (Molur *et al.* 2003) that include tropical moist deciduous, riverine, wet evergreen, and montane wet temperate forests (Oates *et al.* 1980; Poirier 1970) and riparian forests at lower elevations (Roonwal and Mohnot 1977; Kurup 1979; Singh *et al.* 1997). They are also found inhabiting montane shola forest patches at 2150m altitude (Ramachandran 1998).

Nilgiri langurs are primarily folivorous, diurnal, arboreal mammals and use different canopy levels for performing various activities. The middle canopy (11 to 20m) is the preferred stratum with majority of the time spent (57.70%) in this height, followed by the understory at 1-10m (19.87%). The species spends only 4.97% of their time in the top canopy of more than 30m height. They descend to the ground only for crossing grassland patches or roads and for geophagy (Ramachandran 1998).

The species is sympatric with lion-tailed macaques across most of its range; however distinct niche segregation is present as they are primarily folivorous in contrast to the lion tailed macaques that are frugivorous (Roy *et al.* 2012). Further segregation is maintained by vertical stratification between them with Nilgiri langurs utilizing the lower substratum than the lion-tailed macaques during feeding and other activities (Ramachandran 1998, Singh *et al.* 2000).

Feeding ecology

Nilgiri langur similar to other Colobines, is a folivorous primate and exhibit a number of anatomical and behavioural adaptations to mechanically break down and digest coarse plant material (Garber 1987). They are polygastric, with a fore-stomach having high pH (5.0-7.0), specialized for bacterial fermentation (Bauchop and Martucci 1968). Their feeding ecology indicates the presence of young and mature leaves, flowers and fruits in the diet (Horwich 1972, Roonwal and Mohnot 1977, Ramachandran 1995, Srivastava, *et al.* 1996), with foliar components dominating. Other items present include fruits, seeds, flowers, bark, petioles, small twigs, mushrooms etc. (Roy *et al.* 2012).

They feed on a variety of food plants and adapt to new diets easily with changes in their home ranges (Poirier 1968b, 1969a). The number of food species varies greatly with forest type, duration of study period and method of data collection and have been reported as; 39 food plants (period of study three months) in Peryiar, (Horwich 1972); 54 food species in Servalar gallery forests in Mundanthurai wildlife sanctuary (Sunderraj and Johnsingh 1993) 29 food species in Periyar (in 30 days study) (Srivastava *et al.* 1996); 115 plant species (nine months study period) (Oates *et al.* 1980).

Comparing the 15 top food species in these studies, Sunderraj (2001) showed that 13 species were common between the years and nine species between groups. Therefore these nine species; *Derris pinnata*, *Terminalia bellerica*, *Syzygium cumini*, *Tamarindus indica*, *Albizia lebbek*, *Albizia amara*, *Dalbergia paniculata*, *Acacia pennata* and *Commiphora caudata* have been considered as key species for the survival of Nilgiri langurs in the riverine forests at low elevations. *Derris pinnata* and *Terminalia bellerica* were the top two staple food resources constituting 22.18% of the total feeding records.

Of the 219 food items utilized from 102 plant species, the major diet of the Nilgiri langurs consisted of young leaves (44.06%), mature leaves (4.21%), flowers (8.44%), young fruit (10.51%), ripe fruit (4.59%), seeds (18.61%) and other minor food items (like petioles, bark, pith, termites, soil gum, deadwood) (9.57%) (Oates *et al.* 1980, Sunderraj 2001, Roy *et al.* 2012). Young foliage rich in proteins and low in fibre is preferred over mature leaves when present on the same plant (Dougall and Drysdale

1964; Poirier 1970, Horwich 1972; Struhsaker 1975; Hladik 1977; Oates *et al.* 1980; Baranga 1982; Sunderraj 2001) and also when mature foliage formed the most abundantly available potential food resource throughout the year (Oates *et al.* 1980). A highly selective dietary pattern is followed while feeding on mature foliage with the lamina being frequently discarded and only ingesting the petioles (Oates *et al.* 1980); ascribed to their lower non-structural carbohydrate content and higher available nutrients than leaf blades (Garber 1987).

Behaviour and social organization

The general daily activity of each Nilgiri langur troop includes frequent feeding bouts alternating with resting bouts during the day, interspersed with movement between feeding patches to change feeding locations (Horwich 1980). The troops can have four – eight such feeding/resting bouts during the day. A bimodal trend in the feeding bouts has been observed, one between 6:00-9:00 hours and the other between 16:00-19:00 hours, spending around 48.96% and 55.77% of their time respectively (Horwich 1980, Sunderraj 2001).



This activity pattern has been explained by the fact that the langurs needed to compensate for the long hours of non-feeding during the night to gain the necessary energy levels. The Nilgiri langur troops studied by Horwich (1980) showed a trimodal activity pattern, at 7:00 hours, noon and between 15:00-19:00 hours. Nilgiri langurs also undertake long and active trips late during the day when heading towards resting sites (Horwich 1972). Grooming activity takes place mainly between 8:00-12:00 hours and again in the afternoon between 13:00-16:00 hours; when feeding activity is at a low level. Play behaviour shows similar bimodal peaks once in the morning and again in the evening.

Social behaviour and structure

Nilgiri langur troops are structured into uni-male, multi-male, all-male and all-female groups (Sunderraj 2001, Roonwal and Mohnot 1977); however, multi-male and all-female groups are uncommon. Troops with only one adult male are characteristic of the Nilgiri langur social organization on the Mundanthurai plateau (KMTR) as well as at higher elevations (Poirier 1970, Hohmann and Sunderraj 1990).

The troop structure is highly fluid depending on the behavioural traits of individuals (Poirier 1969b); strong affiliative bonds exist between related females with distinct linear dominance hierarchies (Poirier 1970). Subordinate males challenge dominant ones; however, agonistic interactions between females are rare and they may emigrate without aggression from other troop members (Poirier 1970).

The troop size of the species varies for different locations and has been reported as; 5.68 in Shendurney Wildlife Sanctuary (Ramachandran 1995), 5.89 in the Silent Valley National Park (Joseph

and Ramachandran 2003). Daniel and Kannan (1967) described the troop size to range from 1 – 30 individuals. Poirier (1970) estimated an average troop size of 17 individuals in the Ootacamund area, Nilgiri Hills; while, Sunderraj (2001) reported a mean group size of 18.5 individuals in the Mundanthurai Plateau. This variation in troop size in different habitats is apparently caused by the differences in habitat quality and population density (Ramachandran 1998). Poirier (1968b) suggested that troops inhabiting high population density areas have smaller home ranges and in turn smaller troop size when compared to other areas. Bigger troops with larger home range have a greater probability of range overlap that might lead to increased agonistic interactions between the troops (Hohmann and Sunderraj 1990).

The age–sex composition has been reported to be female-biased in all the demographic studies (Poirier 1969b, Hohmann and Sunderraj 1990, Ramachandran 1998, Ramachandran and Joseph 2001) while the ratio of adult individuals (adults and sub-adults) to immature (infants and juveniles) ones show considerable bias towards the adults (100 adults:34 immature) at higher elevations (Poirier 1970) compared to that reported from the low elevations/foothills of the Mundanthurai plateau (100:57) (Sunderraj 2001).

Mother-infant relationship differs from other langurs with a feeble bond between the mother and infant and early weaning affecting the socialization process. The mother exhibits relative disinterestedness towards her infant and limited inter-animal interactions such as grooming and play while a juvenile maintains a close relationship with its mother, if allowed. They have a very short maternal investment, often supplemented by inconsistent allo-maternal care (Poirier 1968a). Poirier (1968a) noted that mothers may leave infants in the vicinity of other females to forage. Jay (1963) reported that non-lactating females often allow a newborn infant to suckle as a means of reducing stress to the infant. Poirier (1968a) observed that females engaged in babysitting showed no preference for nursing their own versus other females' infants and allo-mothering was also independent of relatedness or rank.

Territoriality

Nilgiri langurs have been reported to be extremely territorial of their home ranges with adult males ascending tree tops to scan for intruders. Territorial defence involves exchange of visual and/or vocal signals by adult males with frequent encounters between inter-troop males, but physical contact and injury are rare. Inter-troop separation is maintained through variable movement patterns, male whoop display and male vigilance behaviour (Poirier 1968c).

Aggressive inter-specific interactions with sympatric species have been observed during feeding with significantly seasonal influence (Sushma and Singh 2006). Nilgiri langurs and Lion tailed macaques show mutual intolerance during post-monsoon period when important food resources (flowers and fruits of *C. exarillata* and fruits of *F. Microcarpa*) are abundant. The interaction matrices of species pairs as studied by Sushma and Singh (2006), indicated inter-specific dominance hierarchy, with Bonnet macaque dominating all other species, followed by Lion-tailed macaque, Nilgiri langur and Giant

squirrel respectively, and no evidence of hierarchy or intolerance between Nilgiri langurs and Giant squirrels.

Grooming

Roonwal and Mohnot (1977) stated that grooming in Nilgiri langurs is less frequent than Hanuman langurs and macaques and described it as being performed using both or one hand, palmand back of the hand; difficult to reach areas are groomed using the hind limbs. Except for occasional grooming bouts the groomer rarely uses its tongue or teeth in grooming. Social grooming in Nilgiri langurs serves to reduce tension between the individuals after agonistic encounters which accounts for approximately 45% of the grooming bouts. Self-grooming is limited to legs and thighs, where visual inspection can accompany manipulation and occurs in short bouts of less than five minutes.

Play

Play behaviour is exhibited mostly by infants and sub-adults with adults participating only in small troops that lack other members of these age classes. Play behaviour directed at mothers is unidirectional with mothers being passive participants. Play behaviour is initiated at the age of 3 months and up to four years of age for females and five – six years of age for males during the morning and afternoon resting and feeding periods (Poirier 1970).

Reproductivebehaviour

Limited information on the reproductive behaviour of the species exists; however, it is assumed to be similar to that of its closest relative; the Hanuman langur. Birth seasonality shows 2 distinct peaks in May and in November in the foothills of the Mundanthurai plateau, (Sunderraj 2001) and rain forests (Poirier 1970); coinciding with the availability of fresh leaf sprouts and growth following the southwest and northeast monsoons.

Table 2: Life history traits of Nilgiri langurs

Average age at sexual maturity	3-5 years
Gestation period	140 to 220 days
Birth seasonality	May and November (Poirier 1970, Sunderraj 2001)
Weaning age	10-11 months (Poirier 1970)

Vocal communication

The Nilgiri langurs produce 19 distinct vocalizations, (Poirier 1970). The different kinds of vocalizations as reported by Hohmann (1989) are: loud calls, cough bark, grunt bark, ho-ho calls, pant bark, soft bark, honk, rumble, snarl, cough, hiccup, alarm call, tonal contact calls, isolation peep, warble, whistle, contact tremolo, squeals, shrieks and wailing. The whoop display by dominant males include a series of 1- 7 whoops integrated with rapid movements along branches that lasts for 1-3 minutes (Horwich 1976) and serves to assert the dominance status in the troop (Horwich 1980).

Distribution

The species is endemic to the Western Ghats of India from the Aramboli Pass (at 8°16'N near the southern tip of India) north to Srimangala (12°01'N, 75°58'E) (Groves 2001) across the states of Karnataka, Kerala and Tamil Nadu. The distribution is disjunct and is spread across three landscapes (Ram 2007) with separated populations. The three landscapes supporting the species are as follows.

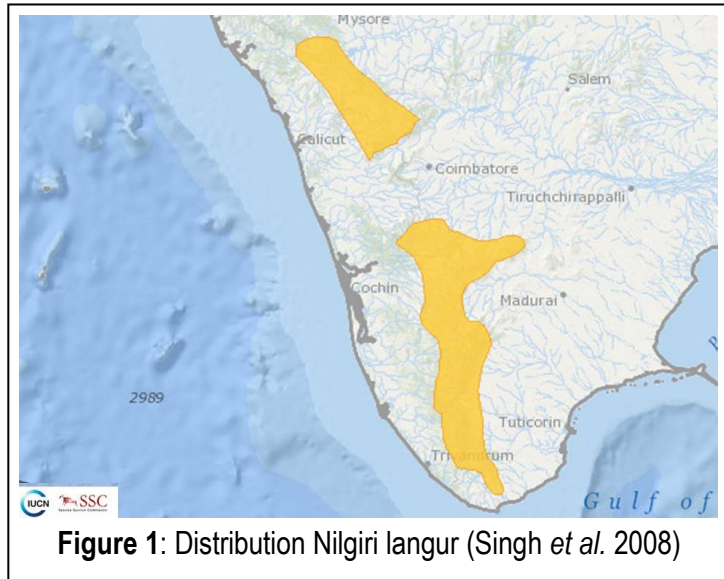


Figure 1: Distribution Nilgiri langur (Singh *et al.* 2008)

Landscape I: Brahmagiri hills in the north to the Silent Valley National Park in the south.

Landscape II: Anaimalai hills, Nelliampathy including Chimmony, Nemmara, Vazachal and Pambikulam Wildlife Sanctuaries and Palani Hills.

Landscape III: Periyar Tiger Reserve, Theni Division, Srivilliputtur Wildlife Sanctuary and southwards till the tip of the Western Ghats.

Threats and Conservation Measures

The species is hunted for its skin (used for making drums), bush-meat and traditional medicines (Roonwal and Mohnot 1977). It is also threatened by habitat loss due to crop plantations, mining, dams, fragmentation, human settlement, hunting, road kills, deliberate fires, storms/flooding, landslides and local trade for pets (Molur *et al.* 2003). The langur habitat is under severe biotic pressure in the form of wood cutting for fire wood (Sunderraj and Johnsingh 2001) which in turn affects the habitat in terms of reduction in food plants, loss of canopy continuity, lack of regeneration and recruitment of important food plants and overall change in habitat quality

The species has been listed under Annexure II of CITES. They are also protected under the Schedule I, Part I of Indian Wildlife Protection Act, 1972 and are listed as Vulnerable C2a (i) under IUCN Red data list.

Status in Captivity

The species is held at four institutions in India with a total of 23 (11.9.3) (ZIMS platform database downloaded on 16 April 2018). The CZA inventory (Table 3) indicates the presence of 25 (6.9.10) specimens, at 5 Indian zoos while the data that was

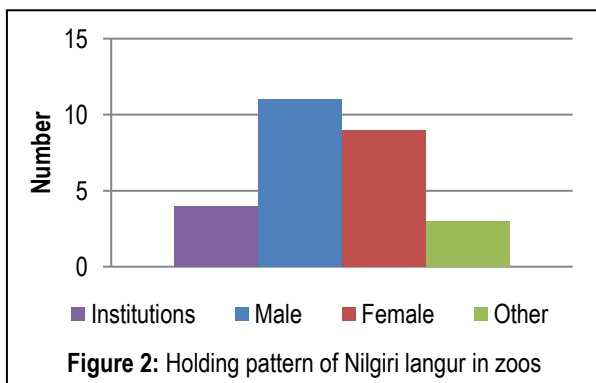


Figure 2: Holding pattern of Nilgiri langur in zoos

made available by holding zoos for the compilation of the studbook includes 25 (11.11.3) specimens at five locations.

Table 3: Status of Nilgiri langur in zoos

Zoo Name	Species360				CZA Inventory				Studbook			
	Male	Female	Unsexed	Total	Male	Female	Unsexed	Total	Male	Female	Unsexed	Total
Arignar Anna Zool. Park, Chennai	9	6	3	18	3	5	10	18	8	7	3	18
Nandankanan Biological Park, Bhubaneswar	1	1	0	2	1	1	0	2	1	1	0	2
Sakkarbaugh Zoo, Junagadh	1	1	0	2	1	0	0	1	1	0	0	1
Sri Chamarajendra Zoo, Mysore	0	1	0	1	0	1	0	1	0	1	0	1
Thiruvananthapuram Zoo, Thiruvananthapuram	0	0	0	0	1	2	0	3	1	2	0	3
Total	11	9	3	23	6	9	10	25	11	11	3	25

Methods

Data on individual history was collected by means of questionnaires, zoo visits and from the websites of CZA and Species360 (ZIMS platform). Questionnaires were sent to the institutions housing Nilgiri langur in India, requesting information for each captive specimen. Data was entered in the Single Population Analysis and Records Keeping System (SPARKS v 1.66) (ISIS 2004) and subsequently exported to population management programme PMxv 1.2 (Ballou *et al.*, 2011) for further analysis.

Scope of the Studbook

- The studbook includes all specimens present in Indian zoos for which records were available from holding institutions and the ZIMS platform. Efforts were made to retrieve information on their holding from the taxon report of the species from the ZIMS platform for institutions from which records were not received
- The CZA inventory was used as a benchmark for population estimates. Data made available by holding zoos and that accessed from the ZIMS platform (Table 1) was compared to the CZA inventory. The comparison revealed that the total number of specimens, as provided by each zoo were in agreement with the CZA inventory.
- The records uploaded on the ZIMS platform by Arignar Anna Zoological Park; however, differed in the number of individuals sex-wise. The data uploaded by the Zoo on the ZIMS platform was used for developing the studbooks as data made available by the zoo included information of 4 (1.1.2) specimens.
- The mnemonics present in the SPARKS software were used as names for individual institutions; while for those institutions for which mnemonics were not present in the SPARKS Software, the same were assigned based on their location listed on the CZA Website and the

same are listed in the location glossary (Annexure IV). The mnemonic India was used for all specimens acquired from the wild.

Analysis

Demographic Status

Historical Population

The studbook includes a total of 85(42.37.6) specimens that have been housed at 12 Indian zoos. The first recorded entry of the species in captivity was at Kamla Nehru Zoological Park, Ahmedabad in 1972 with an unknown sex specimen being acquired by the zoo. Subsequently a wild origin male was acquired by Arignar Anna Zoological Park in 1984 and a female of wild origin in 1985. The captive population is characterized by a small size with a maximum living population of 28 specimens in 2011. Wild origin specimens, 19 (10.8.1)] form approximately 22% of the captive population since its

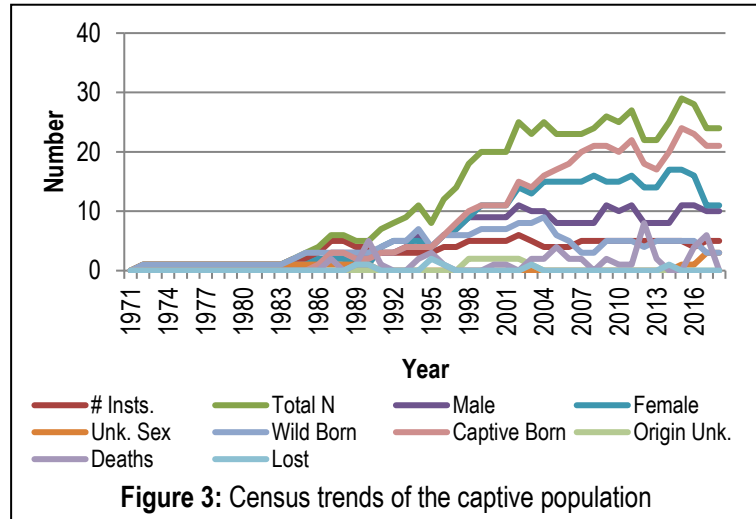


Figure 3: Census trends of the captive population

Table 4: Summary of the Historical Population

	Males	Females	Unknown	Total
Studbook size	42	37	6	85
Acquisition from wild	10	8	1	19
Captive births	31	28	5	64
Origin unknown	1	1	0	2
Deaths	31	26	3	60
Breeding individuals	5	8	0	13

inception. A total of 64 (31.28.5) births have occurred in captivity accounting for 75% of the total population. The captive births are attributed to 13 (5.8) i.e. approximately 15% of the captive population is reproductively active. The population since its inception has also witnessed 60 (31.26.3) deaths. Figure 3 and Table 4 summarize the trends of the historical population while Annexure I includes detailed event-wise information on individual specimens.

Living Population

The living population includes 25 (11.11.3) specimens housed at five institutions; with 3 (2.1.0) wild origin specimens. The data made available by holding institutions indicates the presence of 2 (1.1) reproductively active specimens in the living population. Table 5 summarizes the status of the living population while Annexure II provides location-wise specimen details of the living individuals. A perusal of Table 3 and Annexure II reveals the presence of approximately 72% of the population at Arignar Anna Zoological Park.

Table 5: Summary of living population

	Males	Females	Unknown	Total
Living	11	11	3	25
Wild-born	2	1	0	3
Captive-born	8	10	3	21
Breeding individuals	1	1	0	2

Population Vital Rates

The population is currently declining at a rate of approximately 6% annually with females showing a faster decline of approximately 9%.

The captive population has a generation time of 11.3 years while free ranging specimens become sexually mature by 3 -4 years. The declining trend as is also reflected in the projected population after 20 years with a decrease of 18 individuals in the population. The accuracy of the life table analysis carried out to arrive at the conclusions is limited by the small size of the captive population and limited number of known age and sex specimens in the population

Table 6: Vital rates of the captive population

	Males	Females	Total
λ : Population growth rate	0.962	0.913	0.937
T: Generation time	11.9yrs	10.8 yrs	11.3 yrs
N 20: Projected population at 20 yrs	2.6	4.1	6.7

Age Distribution

Age distribution of 23 (11.11.3) known age living specimens includes 20 (10.10) animals of known age and sex in reproductively active age classes; however, none of these animals has so far reproduced. It also shows the presence of 1 (0.1) female in the post reproductive age class. An additional 4 (1.0.3) specimens are present in the pre-reproductive age class. The age distribution pattern indicates a declining trend in the captive population due to the absence of specimens in both sexes in multiple age classes. The limited reproductive output observed in the population

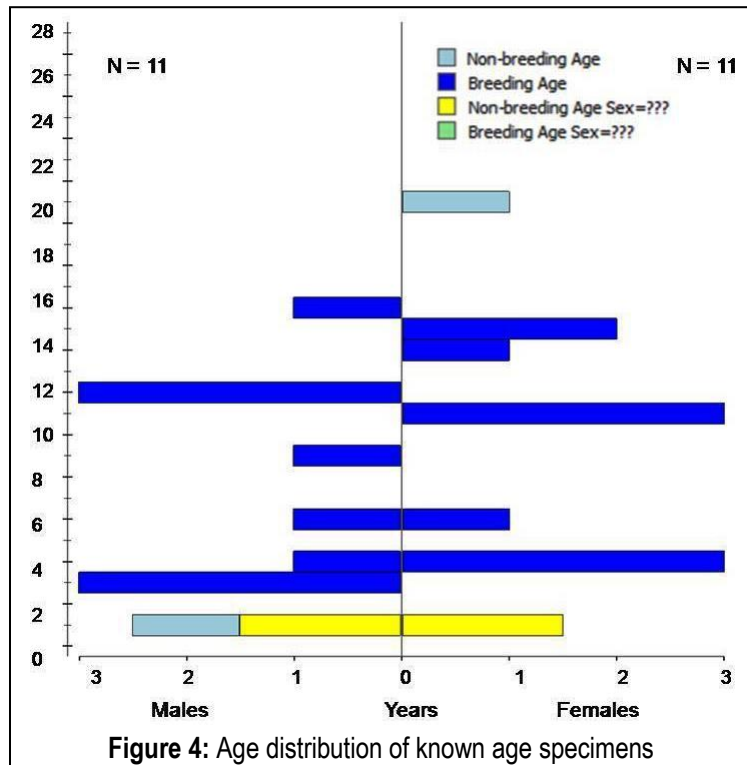


Figure 4: Age distribution of known age specimens

may be an outcome of the small socially unviable groups group sizes present at four of the institutions housing the species in captivity.

Genetic Status

The genetic status of the living population is summarized in Table 7. Analysis indicates that it originates from 6 founders although the population includes 19 (10.8.1) wild origin specimens. The living population of 25 specimens retains 82.75% of the genetic diversity brought in by these four founders. Limitations to effective record keeping due to inadequate marking of individual specimens are reflected in only 32% of the specimens having known pedigrees.

Table 7: Genetic Summary of the current population

Genetic parameters	Current
Founders	6
Living Animals	25
Percent Ancestry Known	32%
Gene Diversity (GD)	0.8275
Founder Genome Equivalent (FGE)	2.90
Mean Inbreeding (F)	0.0250
Population mean kinship (Mk)	0.1725

The unequal representation of the 6 founders in the living population has resulted in the population having the founder genome equivalents of only 2.9 wild origin specimens. The population is characterized by breeding between related individuals with a high level of relatedness between individuals as is reflected by the values of mean inbreeding ($F = 0.0250$) and population mean kinship ($Mk = 0.1725$). Detailed genetic analysis of the population could not be performed due to absence of parentage records from a large portion of the captive-born individuals.

Pairing Recommendations

Attempts to develop breeding recommendations for the captive Nilgiri langur population were limited by the presence 64% of animals of unknown ancestry (8.5.3) in the living population. Recommendations could be arrived at for 2 pairs of animals listed in table 8 below.

Table 8: Pairing recommendations for Nilgiri langur

Dam	Dam location	Sire	Sire location	F	dGD	MSI
00084	Thiruvananthpuram	00083	Thiruvananthpuram	0.0000	0.0319	1
00057	Bhubaneswar	00036	Chennai	0.0000	0.0143	3

Box 1: Mate Suitability Index (MSI)

It is a numerical genetic assessment of a male-female pair that incorporates several variables into one ranking (MSI range is 1 to 7, with 1 being the most genetically beneficial).

The default value in the table is the *MSI* (Mate Suitability Index) value for each male –female pair. *MSI* is a composite score that integrates four genetic components into a single index:

Delta GD (dGD): Change in gene diversity (GD) of the population if one offspring is produced by the pair. Positive dGD increases the GD of the population, while negative dGD decreases GD.

Differences in MK values (MKDiff): Difference in the genetic value (mean kinship value) of the male and female. Breeding a pair with a large MKDiff is detrimental because it combines under-represented and over-represented genetic lines.

Inbreeding coefficient (F): Inbreeding coefficient of any offspring resulting from the pair (i.e., the kinship value for the pair). Inbreeding is considered to be detrimental to the fitness of the resulting offspring.

Unknown ancestry: The amount of unknown ancestry in the male and female. Incomplete pedigree information means that the genetic value and relatedness of a pair cannot be accurately calculated.

- 1 = very beneficial (genetically) to the population;
- 2 = moderately beneficial,
- 3 = slightly beneficial;
- 4 = slightly detrimental,
- 5 = detrimental, should only be used if demographically necessary
- 6 = very detrimental (should be considered only if demographic considerations override preservation of genetic diversity)
- “-“= very highly detrimental (should not be paired, due to high level of kinship of pair)

Using Pairwise Info

The default table of *MSI* values for pairs can be used to quickly assess the relative genetic value of a pair, subset of pairs, potential mates for one individual, and many other valuable data when making breeding recommendations. This can be especially helpful to quickly explore options for pairing individuals at one facility that houses numerous individuals of each sex or to quickly identify an alternative suitable mate if a recommended breeding fails.

Source: Traylor-Holzer, K. (ed.). 2011.

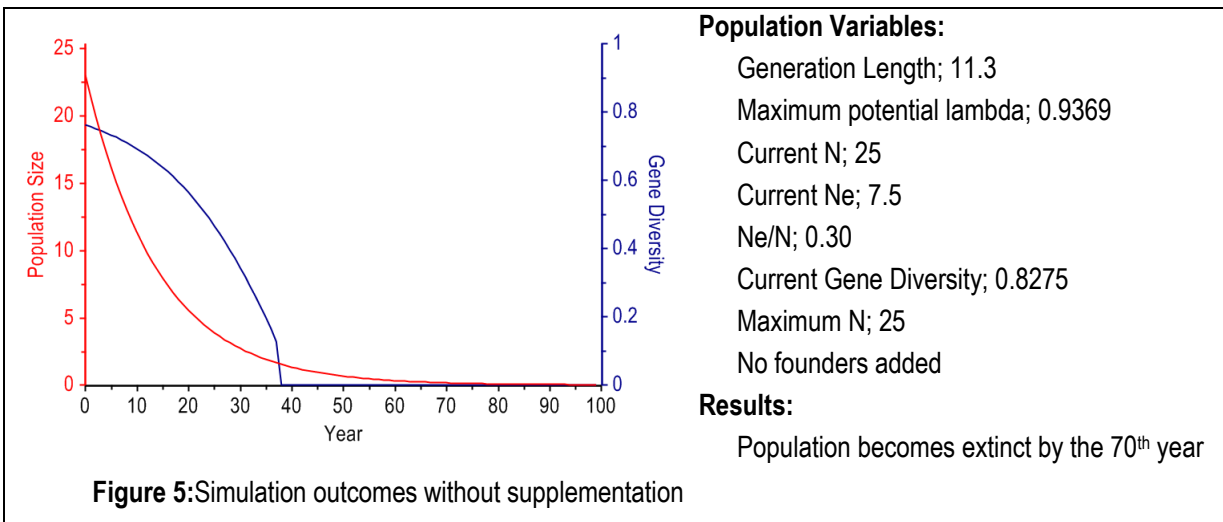
Targets for Population Management

The current captive population of Nilgiri langur includes 25 (11.11.3) individuals that includes 3 (2.1.0) wild origin specimens. The current population is derived from 6 founders none of which are currently living. The population is currently declining at approximately 6% ($\lambda = 0.937$) per annum. The population retains 82.75% of the genetic diversity of 6 founders and includes closely related individuals (Mean Inbreeding: 0.0250 and Population mean kinship: 0.1725). Achieving conservation goals for the population is thus of critical importance.

Multiple simulations were run using PMx to determine the fate of the current population for assessing the effect of management interventions that result in an increased population growth rate desired for achieving demographic stability and supplementation with effective founders for ensuring genetic viability; over the next 100 years. The outcomes of the scenarios that were run without change and with changes (supplementation with effective founders and increasing the population growth rate) that ensure a genetically viable and demographically stable population over the next 100 years are presented below.

Scenario I:

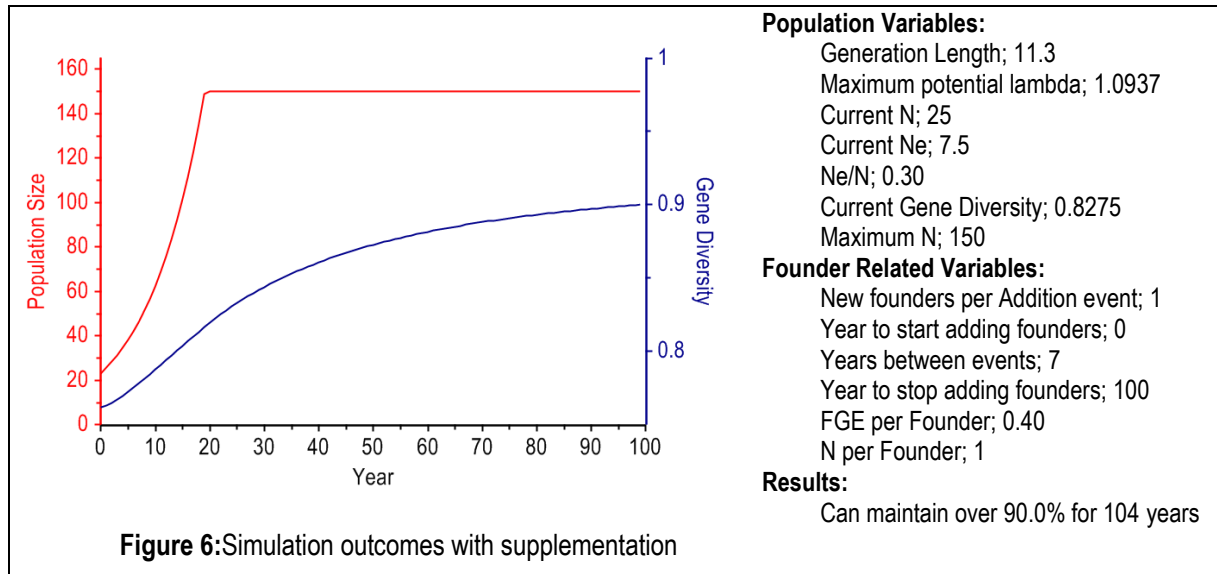
The simulation was run using the current population variables without supplementation with additional animals while retaining the current population size (25). The outcomes indicate that the population in captivity is likely to become extinct genetically by the 40th year and demographically within 70 years due to the current rate of decline. The population variables used and the outcomes of the simulation are presented in Figure 5.



Scenario II:

The outcomes of the simulation that was run using a maximum potential lambda of 1.0937 and a maximum population size of 150 specimens with supplementation by one effective founder every seven years provided a population that was able to achieve the goals of maintaining 90% genetic diversity and a demographically stable population for 104 years. The population and founder related variables, and

the simulation outcome are presented as Figure 6. The increase in population growth rate can be achieved by ensuring that all reproductively active specimens get an opportunity to contribute to the growth of the population. The inclusion of additional effective founders should target lineages that are over-represented to ensure maximum genetic diversity in the captive population.



Conclusions and Recommendations

Nilgiri langur continues to face threats to their long term survival in natural habitats across their distribution range and is accordingly listed in the Schedule I of the Wildlife Protection Act of India and as Vulnerable in the IUCN Redlist of Threatened Species (2008). Maintaining *ex-situ* populations that are demographically stable and genetically viable *ex-situ* populations is thus crucial for ensuring the continued survival of the species.

A review of the status of the current captive population in Indian zoos based on analysis of available pedigree records indicates that the population is declining ($\lambda = 0.937$). The population has an equitable sex ratio with an absence of proven breeders, though a large proportion belongs to reproductively active age classes. It further retains limited genetic diversity (82.75%) originating from a small founder base ($N = 6$). Further unequal representation of founder genome as indicated by the founder genome equivalents (2.9) and high level of relatedness ($F = 0.0250$; $MK = 0.1725$) are threats that the captive population faces. Additional causes of concern for the captive population are its small size, low reproductive output; unavailability of records on parentages and dates of events in life histories of specimens further limited planning of breeding pairs.

Effective *ex-situ* conservation of the species can be ensured by addressing the above concerns as suggested below:

1. Limitations to record-keeping undermine efforts to identify lineages in the captive population and develop an effective population management plan for the species. The lack of clarity of relationships between individuals can be addressed by using appropriate molecular genetics tools.
2. Marking of animals for individual animal identification along-with behavioural observations of the captive animals for identifying parents/ offspring can ensure improved record keeping by enabling identification of parents. The use of externally discernible marks is suggested to enable effective implementation of a population plan developed on the basis of accurate animal identification.
3. Continued low reproductive output limits population growth. An assessment of the existing husbandry and housing practices for the species in captivity can help in identifying and addressing shortcomings.
4. The species is gregarious in nature and lives in troops; however, the species is present as single specimens or as pairs at 3 locations. The social needs of the species need to be addressed in captivity to ensure optimum reproductive output.

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Historical Population of Nilgiri langur (*Trachypithecus johnii*) in Indian Zoos

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
00001	M	~ 1982	UNK	UNK	DACCA DELHI	~ 1982 06-Apr-90 20-Feb-91	Birth Transfer Death
00002 210001	F	~ 1986	UNK	UNK	DACCA DELHI	~ 1986 04-Jun-90 09-Dec-14	Birth Transfer Death
00003 600032 0006B776BE	M	~ 1987	WILD	WILD	INDIA ASSAM	12-Feb-90 12-Feb-90 15-Sep-09	Capture Transfer Death
00004 HOG-2 LAXMI 0006B89D7F	F	~ 1985	WILD	WILD	INDIA SEPAHIJAL	10-Apr-96 11-Apr-96 02-Jan-10	Capture Transfer Death
00005 3 BUANGI 98102058074	F	~ 1999	WILD	WILD	INDIA AIZAWL	05-Mar-00 06-Mar-00	Capture Transfer
00006 HANGI	?	????	WILD	WILD	INDIA AIZAWL	???? ???? 19-Jul-04	Capture Transfer Death
00007 TE-A	M	????	WILD	WILD	INDIA AIZAWL	???? ???? 31-Dec-04	Capture Transfer Death
00008 VALA	?	????	WILD	WILD	INDIA AIZAWL	???? ???? 28-Dec-06	Capture Transfer Death
00009	?	~ Mar 2001	WILD	WILD	INDIA ROING	12-May-01 12-May-01 03-Feb-04	Capture Transfer Death
00010 SARASWATI	F	~ 1999	WILD	WILD	INDIA SEPAHIJAL	02-Jun-02 02-Jun-02 30-Apr-03	Capture Transfer Death
00011 ZOVI(NEW)/Mary 98102056874	F	~ 2003	WILD	WILD	INDIA AIZAWL	16-Jan-04 18-Jan-04	Capture Transfer
00012 CHALBENGI 98102057838	F	~ 2003	WILD	WILD	INDIA AIZAWL	05-Feb-04 07-Feb-04	Capture Transfer
00013 8 BUKA 98102055892	M	~ 2006	WILD	WILD	INDIA AIZAWL	26-Apr-07 28-Apr-07 7 Oct 2012	Capture Transfer Death
00014 HOG-1 MANIKA 0006B7422C	F	????	WILD	WILD	INDIA SEPAHIJAL	13-May-05 13-May-05 15-Apr-09	Capture Transfer Death

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
00015 600033 MINI 0006B729F1	F	~ 1997	WILD	WILD	INDIA ASSAM	27-Jun-05 27-Jun-05 07-Mar-13	Capture Transfer Death
00016 1 BAWIHA 98102055847	M	~ 2005	WILD	WILD	INDIA AIZAWL	03-Feb-06 05-Feb-06	Capture Ltf
00017	M	????	WILD	WILD	INDIA SHILLONG TURA	???? ???? 08-Sep-05 28-Jun-06	Capture Transfer Transfer Death
00018 2 NUTEI 98102058298 210003	F	~ 2005	WILD	WILD	INDIA AIZAWL DELHI	???? 09-Jan-07 09-Sep-14	Capture Transfer Transfer
00019	F	????	WILD	WILD	INDIA TURA	31-Mar-06 31-Mar-06 24-Sep-06	Capture Transfer Death
00020 DUMA	M	????	WILD	WILD	INDIA AIZAWL	25-Sep-06 26-Sep-06	Capture Ltf
00021 BANKAWIA	M	????	WILD	WILD	INDIA AIZAWL	12-Oct-06 13-Oct-06	Capture Ltf
00022 H1 LINGGI	M	~ 1999	WILD	WILD	INDIA ITANAGAR	12-Mar-07 12-Mar-07	Capture Transfer
00023 H-2 DELLO	F	~ 1997	WILD	WILD	INDIA ITANAGAR	12-Mar-07 12-Mar-07 22-Oct-13	Capture Transfer Death
00024 H-4 YASUM	F	~ 1997	WILD	WILD	INDIA ITANAGAR	12-Mar-07 12-Mar-07	Capture Transfer
00025 H-16 BABY 98102057VB156	M	~ 2005	00022	00023	INDIA ITANAGAR	12-Mar-07 12-Mar-07	Capture Transfer
00026 H-5 LAGDER	M	~ 1997	WILD	WILD	INDIA ITANAGAR	15-Mar-07 15-Mar-07	Capture Transfer
00027 H-6 RUKMINI	F	~ 1997	WILD	WILD	INDIA ITANAGAR	15-Mar-07 15-Mar-07 28-Oct-10	Capture Transfer Death
00028 H-3 NEGA 98102055475	M	~ 2000	00026	00027	INDIA ITANAGAR	15-Mar-07 15-Mar-07 23-Aug-09	Capture Transfer Death
00029 H-9 981098102057899	M	~ 1997	WILD	WILD	INDIA ITANAGAR	04-Dec-07 04-Dec-07	Capture Transfer

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
00030 H-10 YAPA 98100800507	F	~ 2001	00029	WILD	INDIA ITANAGAR	04-Dec-07 04-Dec-07	Capture Transfer
00031 H-11 MITHUM	M	????	WILD	WILD	INDIA ITANAGAR	04-Dec-07 04-Dec-07 02-Jun-09	Capture Transfer Death
00032 H-12 TAPING 98102056942	M	~ 2005	WILD	WILD	INDIA ITANAGAR	04-Dec-07 04-Dec-07	Capture Transfer
00033 H-17 PINTU 98102055475	M	~ 2006	WILD	WILD	INDIA ITANAGAR MIAO	04-Dec-07 04-Dec-07 ????	Capture Transfer Ltf
00034 H-13 DEOMALI 210002 98102055330	M	~ 2005	WILD	WILD	INDIA ITANAGAR DELHI	20-Jan-08 20-Jan-08 04-Jul-10	Capture Transfer Transfer
00035	M	????	WILD	WILD	INDIA TURA	21-Jan-08 21-Jan-08 16-Feb-08	Capture Transfer Death
00036 HOG-3 NARAYAN 0006B742FA	M	~ Feb 2005	WILD	WILD	INDIA SEPAHIJAL	22-Sep-08 22-Sep-08 28-Jun-13	Capture Transfer Death
00037 H-15 CUTE 98102056666	M	~ 2004	WILD	00038	INDIA ITANAGAR	23-Feb-08 23-Feb-08	Capture Transfer
00038 H-14 MISHMI BAIDEO 98102055876	F	~ 1999	WILD	WILD	INDIA ITANAGAR	23-Feb-08 24-Feb-08	Capture Transfer
00039 H-18 ANGA HOG-5 981020858060	F	05-Jul-08	00026	00027	ITANAGAR SEPAHIJAL	05-Jul-08 29-Aug-12 15-Nov-14	Birth Transfer Death
00040 H-19 JIMMY 98102057183	M	22-Sep-08	00028	00024	ITANAGAR	22-Sep-08	Birth
00041 SENI	?	????	WILD	WILD	INDIA AIZAWL	???? ????	Capture Transfer Ltf
00042 127 MUNNI 600035 0006B756AE	F	~ Jul 2006	WILD	WILD	INDIA SHILLONG ASSAM	25-Sep-06 25-Sep-06 18-Dec-08	Capture Transfer Transfer

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
00043	F	~ Nov 2001	WILD	WILD	INDIA MIAO	~ Feb 2002 ~ Feb 2002	Capture Ltf
00044 600001	M	~ 1972	WILD	WILD	INDIA ASSAM	12-Jan-80 12-Jan-80 30-Jul-83	Capture Transfer Death
00045 600002	F	~ 1978	WILD	WILD	INDIA ASSAM	25-Mar-80 25-Mar-80 19-Aug-83	Capture Transfer Death
00046 600003	M	~ 1978	WILD	WILD	INDIA ASSAM	21-Dec-82 21-Dec-82 19-Jul-84	Capture Transfer Death
00047 600005	M	~ 1979	WILD	WILD	INDIA ASSAM	04-Feb-83 04-Feb-83 18-Sep-85	Capture Transfer Death
00048 600006	M	~ 1979	WILD	WILD	INDIA ASSAM	04-Feb-83 04-Feb-83 19-Sep-85	Capture Transfer Death
00049 600004	F	~ 1979	WILD	WILD	INDIA ASSAM	11-Mar-83 11-Mar-83 12-Apr-83	Capture Transfer Death
00050 600007	M	~ 1981	WILD	WILD	INDIA ASSAM	06-Apr-83 06-Apr-83 18-Sep-85	Capture Transfer Death
00051 600008	F	~ 1981	WILD	WILD	INDIA ASSAM	06-Apr-83 06-Apr-83 18-Jun-86	Capture Transfer Death
00052 600009	F	~ 1978	WILD	WILD	INDIA ASSAM	24-Apr-83 24-Apr-83 04-Nov-83	Capture Transfer Death
00053 600010	M	~ 1981	WILD	WILD	INDIA ASSAM	26-Apr-84 26-Apr-84 22-Jun-86	Capture Transfer Death
00054 600011	F	~ 1981	WILD	WILD	INDIA ASSAM	06-May-85 06-May-85 22-Jun-86	Capture Transfer Death
00055 600012	F	~ 1984	WILD	WILD	INDIA ASSAM	05-Mar-86 05-Mar-86 20-Jun-86	Capture Transfer Death
00056 600013	F	~ 1984	WILD	WILD	INDIA ASSAM	05-Mar-86 05-Mar-86 08-Jul-86	Capture Transfer Death
00057 600014	M	~ 1978	WILD	WILD	INDIA ASSAM	07-Apr-86 07-Apr-86 28-Aug-86	Capture Transfer Death
00058 600015	M	~ 1978	WILD	WILD	INDIA ASSAM	07-Apr-86 07-Apr-86 16-Jul-86	Capture Transfer Death
00059 600016	M	~ 1980	WILD	WILD	INDIA ASSAM	10-Apr-86 10-Apr-86 07-Oct-87	Capture Transfer Death

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
00060 600017	F	~ 1983	WILD	WILD	INDIA ASSAM	19-Apr-86 19-Apr-86 15-Sep-88	Capture Transfer Death
00061 600018	M	~ 1984	WILD	WILD	INDIA ASSAM	08-Jun-86 08-Jun-86 17-Jul-89	Capture Transfer Death
00062 600019	M	~ 1982	WILD	WILD	INDIA ASSAM	14-Feb-87 14-Feb-87 31-Jul-89	Capture Transfer Death
00063 600020	M	~ 1985	WILD	WILD	INDIA ASSAM	22-Jul-87 22-Jul-87 01-Sep-89	Capture Transfer Death
00064 70 KALU	M	????	WILD	WILD	INDIA LUCKNOW	27-Nov-87 27-Nov-87	Capture Transfer
00065 600021	M	10-Dec-87	00061	00060	ASSAM	10-Dec-87 31-Jul-88	Birth Death
00066 600022	M	~ 1987	WILD	WILD	INDIA ASSAM	25-Apr-88 25-Apr-88 19-Sep-89	Capture Transfer Death
00067 600023	F	~ 1986	WILD	WILD	INDIA ASSAM	25-Apr-88 25-Apr-88 17-Aug-88	Capture Transfer Death
00068 600024	F	~ 1988	WILD	WILD	INDIA ASSAM	14-Mar-89 14-Mar-89 02-Apr-89	Capture Transfer Death
00069 600025	F	~ 1988	WILD	WILD	INDIA ASSAM	14-Mar-89 14-Mar-89 12-Sep-89	Capture Transfer Death
00070 600026	F	~ 1987	WILD	WILD	INDIA ASSAM	08-Apr-89 08-Apr-89 09-Jun-90	Capture Transfer Death
00071 600027	F	~ 1987	WILD	WILD	INDIA ASSAM	21-Apr-89 21-Apr-89 28-Feb-91	Capture Transfer Death
00072 600028	M	~ 1988	WILD	WILD	INDIA ASSAM	11-May-89 11-May-89 29-Oct-90	Capture Transfer Death
00073 600029	F	~ 1987	WILD	WILD	INDIA ASSAM	11-May-89 11-May-89 02-Dec-90	Capture Transfer Death
00074 600030	M	~ 1988	WILD	WILD	INDIA ASSAM	14-Jun-89 14-Jun-89 25-May-90	Capture Transfer Death
00075 600031	M	~ 1987	WILD	WILD	INDIA ASSAM	12-Feb-90 12-Feb-90 15-Sep-09	Capture Transfer Death
00076	M	????	WILD	WILD	INDIA IMPHAL	~ 1997 ~ 1997 07-Jun-11	Capture Transfer Death

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
00077	F	~ 1997	WILD	WILD	INDIA IMPHAL	~ 1997 ~ 1997 04-Oct-11	Capture Transfer Death
00078 RANI 71	F	????	WILD	WILD	INDIA LUCKNOW	26-Mar-98 26-Mar-98 04-Oct-12	Capture Transfer Death
00079	F	????	WILD	WILD	INDIA MIAO	20-Feb-05 20-Feb-05	Capture Transfer
00080 YAPI	F	????	WILD	WILD	INDIA ITANAGAR INDIA	15-Mar-07 15-Mar-07 ????	Capture Transfer Release
00081 H-7 MR. BATT 98102055475	M	~ 1997	WILD	WILD	INDIA ITANAGAR	15-Mar-07 15-Mar-07	Capture Transfer
00082 135 600034 BABU 0006B77654	M	~ 1999	WILD	WILD	INDIA SHILLONG ASSAM	13-Aug-07 13-Aug-07 18-Dec-08	Capture Transfer Transfer
00083 HOG-6 BAWIHI 98102057696	F	~ 2006	WILD	WILD	INDIA AIZAWL SEPAHIJAL	08-Nov-07 09-Nov-07 23-Mar-13	Capture Transfer Transfer
00084 5 BULI 98102058298	F	~ 2006	WILD	WILD	INDIA AIZAWL	09-Nov-07 10-Nov-07	Capture Ltf
00085 136 600036 HARUBABU 0006B771C6	M	~ Apr 2008	WILD	WILD	INDIA SHILLONG ASSAM	03-Oct-08 03-Oct-08 18-Dec-08	Capture Transfer Transfer
00086 H-20 TORAM	F	05-Oct-08	00022	00023	ITANAGAR	05-Oct-08	Birth
00087 H-21 DAOLI	M	29-Jun-09	00029	00038	ITANAGAR	29-Jun-09 01-Sep-10	Birth Death
00088	M	~ Dec 2008	WILD	WILD	INDIA MIAO	05-Sep-09 05-Sep-09	Capture Transfer
00089 INNOW	M	????	WILD	WILD	INDIA ITANAGAR	???? ????	Capture Transfer
00090	M	~ Jan 2010	WILD	WILD	INDIA MIAO	23-Mar-10 23-Mar-10	Capture Transfer
00091 OP-1 BOBOA	M	????	WILD	WILD	INDIA AIZAWL	15-Apr-10 15-Apr-10	Capture Transfer
00092 600037	F	~ 2009	WILD	WILD	INDIA ASSAM	04-May-10 04-May-10	Capture Transfer

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
						20 Feb 2011	Death
00093 KALI	F	~ Jan 2010	WILD	WILD	INDIA IMPHAL	09-Jun-10 09-Jun-10	Capture Transfer
00094 H-23 BOGI/ATI-OPAN	M	09-Aug-10	00026	00027	ITANAGAR	09-Aug-10 21-Jan-12	Birth Death
00095 ROCKY	M	~ 2007	WILD	WILD	INDIA KOHIMA	14-Sep-10 14-Sep-10	Capture Transfer
00096	M	~ May 2009	WILD	WILD	INDIA MIAO	07-Nov-10 07-Nov-10	Capture Transfer
00097 H-22 JISU	?	25-Dec-10	00022	00023	ITANAGAR	25-Dec-10	Birth
00098 OP-2 CHHURI	F	????	WILD	WILD	INDIA AIZAWL	10-Mar-11 10-Mar-11	Capture Transfer
00099 HOG-4 KRISHNA	M	~ 2009	WILD	WILD	INDIA SEPAHIJAL	08-May-11 08-May-11 20-Sep-14	Capture Transfer Death
00100 ZB-1 ZARA 98102057879	M	05-Jun-11	00016	00005	AIZAWL	05-Jun-11	Birth
00101 H-25 MUNUMUNU 98102056396	F	????	WILD	WILD	INDIA MIAO ITANAGAR	???? ???? 20-Jun-11 05-Sep-14	Capture Transfer Transfer Death
00102 H-32 NAGAR	?	18-Sep-11	00029	00038	ITANAGAR	18-Sep-11	Birth
00103 H-27 SONU	?	30-Jun-12	00037	00024	ITANAGAR	30-Jun-12	Birth
00104 600039 BABLI	F	~ 2004	WILD	WILD	INDIA ASSAM	10-Mar-13 10-Mar-13	Capture Transfer
00105 H-31 ITA	?	26-Mar-13	00026	000101	ITANAGAR	26-Mar-13	Birth
00106 ZB-2	?	16-Sep-13	00016	00005	AIZAWL	16-Sep-13	Birth
00107 TWO-FI	F	~ 2011	WILD	WILD	INDIA KOHIMA	25-Nov-13 25-Nov-13	Capture Transfer
00108 MAKIMACHA	M	????	WILD	WILD	INDIA IMPHAL	~25 Jul 2016 06-Aug-16	Capture Transfer
00109 H-33 NEHA	?	08-Aug-15	00029	00038	ITANAGAR	08-Aug-15	Birth
00110 H-34	?	21-Apr-15	00081	00030	ITANAGAR	21-Apr-15	Birth

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
PULU							
00111 600050 MANSE 0006CD387F	M	????	WILD	WILD	INDIA ASSAM	~ 1 Nov 2011 14-Nov-11	Capture Transfer
00112 600051 LILEE 0006CDDOAC	F	????	WILD	WILD	INDIA ASSAM	~ 1 Nov 2011 14-Nov-11	Capture Transfer
00113 600052 DEEPU 000757EDB9	M	????	WILD	WILD	INDIA ASSAM	???? 05-Aug-17	Capture Transfer
00114 JHONNY	M	????	WILD	WILD	INDIA KOHIMA	???? 26-Jan-17	Capture Transfer
00115 HOLLY	M	????	WILD	WILD	INDIA KOHIMA	???? 02-Feb-17	Capture Transfer
00116 CHARLIE 98102055874	M	????	WILD	WILD	INDIA AIZAWL	03-Feb-05 25-May-09	Capture Transfer
00117 SITA	F	29-Oct-91	UNK	UNK	ASSAM	29-Oct-91	Birth Lf
00118 RAM	M	25-Nov-95	UNK	UNK	ASSAM	25-Nov-95	Birth Lf
00119 KUSHA 0006590EA8	M	24-Sep-99	00118	00117	ASSAM DELHI	24-Sep-99	Birth Lf
00120 600052 DEEPU	M	????	WILD	WILD	INDIA ASSAM	???? 05-Aug-17	Capture Transfer
00121 H-35	?	21-Oct-17	00081	00030	ITANAGAR	21-Oct-17	Birth
TOTALS: 121 (62.47.12)							

Annexure II

Living Population of Nilgiri langur(*Trachypithecus johnii*) in Indian Zoos

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
Aizawl Zoological Park, Aizawl							
00012 CHALBENGI 98102057838	F	~ 2003	WILD	WILD	INDIA AIZAWL	05-Feb-04 07-Feb-04	Capture Transfer
00091 OP-1 BOBOA	M	????	WILD	WILD	INDIA AIZAWL	15-Apr-10 15-Apr-10	Capture Transfer
00098 OP-2 CHHURI	F	????	WILD	WILD	INDIA AIZAWL	10-Mar-11 10-Mar-11	Capture Transfer
00100 ZB-1 ZARA 98102057879	M	05-Jun-11	00016	00005	AIZAWL	05-Jun-11	Birth
00106 ZB-2 Tekeuhi	F	16-Sep-13	00016	00005	AIZAWL	16-Sep-13	Birth
00116 CHARLIE 98102055874	M	????	WILD	WILD	INDIA AIZAWL	03-Feb-05 25-May-09	Capture Transfer
00005 3 BUANGI 98102058074	F	~ 1999	WILD	WILD	INDIA AIZAWL	05-Mar-00 06-Mar-00	Capture Transfer
00011 ZOVI(NEW)/Mary 98102056874	F	~ 2003	WILD	WILD	INDIA AIZAWL	16-Jan-04 18-Jan-04	Capture Transfer
00013 8 BUKA 98102055892	M	~ 2006	WILD	WILD	INDIA AIZAWL	26-Apr-07 28-Apr-07	Capture Transfer
Total: 9(4.5.0)							
Assam State Zoo cum Botanical Garden, Guwahati							
00042 127 MUNNI 600035 0006B756AE	F	~ Jul 2006	WILD	WILD	INDIA SHILLONG ASSAM	25-Sep-06 25-Sep-06 18-Dec-08	Capture Transfer Transfer
00082 135 600034 BABU 0006B77654	M	~ 1999	WILD	WILD	INDIA SHILLONG ASSAM	13-Aug-07 13-Aug-07 18-Dec-08	Capture Transfer Transfer
00085	F	~ Apr 2008	WILD	WILD	INDIA	03-Oct-08	Capture

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
136 600036 HARUBABU 0006B771C6					SHILLONG ASSAM	03-Oct-08 18-Dec-08	Transfer Transfer
00104 600039 BABLI	F	~ 2004	WILD	WILD	INDIA ASSAM	10-Mar-13 10-Mar-13	Capture Transfer
00111 600050 MANSE 0006CD387F	M	????	WILD	WILD	INDIA ASSAM	~ 1 Nov 2011 14-Nov-11	Capture Transfer
00112 600051 LILEE 0006CDDOAC	F	????	WILD	WILD	INDIA ASSAM	~ 1 Nov 2011 14-Nov-11	Capture Transfer
00113 600052 DEEPU 000757EDB9	M	????	WILD	WILD	INDIA ASSAM	???? 05-Aug-17	Capture Transfer
00120 600052 DEEPU	M	????	WILD	WILD	INDIA ASSAM	???? 05-Aug-17	Capture Transfer
Total: 8(4.4.0)							
National Zoological Park, New Delhi							
00018 2 NUTEI 98102058298 210003	F	~ 2005	WILD	WILD	INDIA AIZAWL DELHI	???? 09-Jan-07 09-Sep-14	Capture Transfer Transfer
00034 H-13 DEOMALI 210002 98102055330	M	~ 2005	WILD	WILD	INDIA ITANAGAR DELHI	20-Jan-08 20-Jan-08 04-Jul-10	Capture Transfer Transfer
Total: 2 (1.1.0)							
Nagaland Zoological Park, Dimapur							
00095 ROCKY	M	~ 2007	WILD	WILD	INDIA KOHIMA	14-Sep-10 14-Sep-10	Capture Transfer
00107 TWO-FI	F	~ 2011	WILD	WILD	INDIA KOHIMA	25-Nov-13 25-Nov-13	Capture Transfer
00114 JHONNY	M	????	WILD	WILD	INDIA KOHIMA	???? 26-Jan-17	Capture Transfer
Total: 3 (2.1.0)							
Biological Park, Itanagar							
00022 H1 LINGGI	M	~ 1999	WILD	WILD	INDIA ITANAGAR	12-Mar-07 12-Mar-07	Capture Transfer

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
00025 H-16 BABY 98102057VB156	F	~ 2005	00022	00023	INDIA ITANAGAR	12-Mar-07 12-Mar-07	Capture Transfer
00026 H-5 LAGDER	M	~ 1997	WILD	WILD	INDIA ITANAGAR	15-Mar-07 15-Mar-07	Capture Transfer
00029 H-9 981098102057899	M	~ 1997	WILD	WILD	INDIA ITANAGAR	04-Dec-07 04-Dec-07	Capture Transfer
00030 H-10 YAPA 98100800507	F	~ 2001	00029	WILD	INDIA ITANAGAR	04-Dec-07 04-Dec-07	Capture Transfer
00032 H-12 TAPING 98102056942	M	~ 2005	WILD	WILD	INDIA ITANAGAR	04-Dec-07 04-Dec-07	Capture Transfer
00037 H-15 CUTE 98102056666	M	~ 2004	WILD	00038	INDIA ITANAGAR	23-Feb-08 23-Feb-08	Capture Transfer
00040 H-19 JIMMY 98102057183	M	22-Sep-08	00028	00024	ITANAGAR	22-Sep-08	Birth
00081 H-7 MR. BATT 98102055475	M	~ 1997	WILD	WILD	INDIA ITANAGAR	15-Mar-07 15-Mar-07	Capture Transfer
00086 H-20 TORAM	F	05-Oct-08	00022	00023	ITANAGAR	05-Oct-08	Birth
00089 H-22 INNOW	M	????	WILD	WILD	INDIA ITANAGAR	???? ????	Capture Transfer
00097 H-24 JISU	?	25-Dec-10	00022	00023	ITANAGAR	25-Dec-10	Birth
00102 H-26 NAGAR	?	18-Sep-11	00029	00038	ITANAGAR	18-Sep-11	Birth
00103 H-27 SONU	?	30-Jun-12	00037	00024	ITANAGAR	30-Jun-12	Birth
00105 H-28 ITA	?	26-Mar-13	00026	000101	ITANAGAR	26-Mar-13	Birth
00109 H-33	?	08-Aug-15	00029	00038	ITANAGAR	08-Aug-15	Birth

Stud# Local ID NAME Transponder	Sex	Birth Date	Sire	Dam	Location	Date	Event
NEHA							
00110 H-34 PULU	?	21-Apr-15	00081	00030	ITANAGAR	21-Apr-15	Birth
00121 H-35	?	21-Oct-17	00081	00030	ITANAGAR	21-Oct-17	Birth
Total: 18 (8.3.7)							
NawabWazid Ali Shah Zoological Garden, Lucknow							
00064 70 KALU	M	????	WILD	WILD	INDIA LUCKNOW	27-Nov-87 27-Nov-87	Capture Transfer
Total: 1 (1.0.0)							
Manipur Zoological Park, Imphal							
00093 KALI	F	~ Jan 2010	WILD	WILD	INDIA IMPHAL	09-Jun-10 09-Jun-10	Capture Transfer
00108 MAKIMACHA	M	????	WILD	WILD	INDIA IMPHAL	~25 Jul 2016 06-Aug-16	Capture Transfer
Total: 2 (1.1.0)							
Mini Zoo, Miao							
00079	F	????	WILD	WILD	INDIA MIAO	20-Feb-05 20-Feb-05	Capture Transfer
00088	M	~ Dec 2008	WILD	WILD	INDIA MIAO	05-Sep-09 05-Sep-09	Capture Transfer
00090	M	~ Jan 2010	WILD	WILD	INDIA MIAO	23-Mar-10 23-Mar-10	Capture Transfer
00096	M	~ May 2009	WILD	WILD	INDIA MIAO	07-Nov-10 07-Nov-10	Capture Transfer
Total: 4 (3.1.0)							
Sepahijala Zoological Park, Agartala							
00083 HOG-6 BAWIHI 98102057696	F	~ 2006	WILD	WILD	INDIA AIZAWL SEPAHIJAL	08-Nov-07 09-Nov-07 23-Mar-13	Capture Transfer Transfer
Total: 1 (0.1.0)							
Total living:							

Annexure III

Pedigree Chart Report Nilgiri langur Nilgiri langur (*Trachypithecus johnii*) in Indian Zoos

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00001
 =====

UNK

UNK



Sex: Male
 Birth Date: ~ 1982
 Last Location: DELHI (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00002
 =====

UNK

UNK



Sex: Female
 Birth Date: ~ 1986
 Last Location: DELHI (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00003
 =====

WILD

WILD



Sex: Male
 Birth Date: ~ 1987
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00004
 =====

WILD

WILD



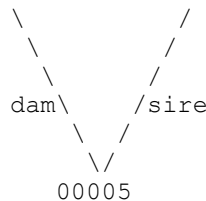
Sex: Female
 Birth Date: ~ 1985
 Last Location: SEPAHIJAL (dead)
 House Name: laxmi
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00005
 =====

WILD

WILD



Sex: Female
 Birth Date: ~ 1999
 Last Location: AIZAWL
 House Name: BUANGI
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00006
 =====

WILD

WILD



Sex: Unknown
 Birth Date: ????
 Last Location: AIZAWL (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00007
 =====

WILD

WILD



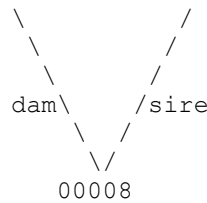
Sex: Male
 Birth Date: ????
 Last Location: AIZAWL (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00008
 =====

WILD

WILD



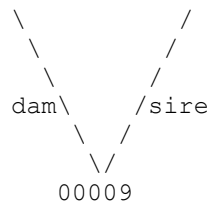
Sex: Unknown
 Birth Date: ????
 Last Location: AIZAWL (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00009
 =====

WILD

WILD



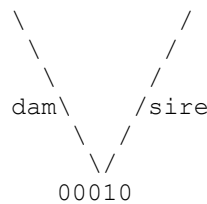
Sex: Unknown
 Birth Date: ~ Mar 2001
 Last Location: ROING (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00010
 =====

WILD

WILD



Sex: Female
 Birth Date: ~ 1999
 Last Location: SEPAHIJAL (dead)
 House Name:
 Tattoo:
 Tag/Band:

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00011
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ~ 2003
                                                Last Location: AIZAWL
dam \      /sire                               House Name: Zovi (new) /Mary
  \      /
   \    /
    \  /
     \ /
      V
    00011
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00012
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ~ 2003
                                                Last Location: AIZAWL
dam \      /sire                               House Name: Chalbengi
  \      /
   \    /
    \  /
     \ /
      V
    00012
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00013
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date: ~ 2006
                                                Last Location: AIZAWL (dead)
dam \      /sire                               House Name: BUKA
  \      /
   \    /
    \  /
     \ /
      V
    00013
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00014
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ???
                                                Last Location: SEPAHIJAL (dead)
dam \      /sire                               House Name: manika
  \      /
   \    /
    \  /
     \ /
      V
    00014
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00015
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ~ 1997
                                                Last Location: ASSAM (dead)
dam \      /sire                               House Name: MINI
  \      /
   \    /
    \  /
     \ /
      V
    00015
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00016
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date: ~ 2005
                                                Last Location: AIZAWL
                                                House Name: BAWIHA
                                                Tattoo:
                                                Tag/Band:
    \      /
   \    /
  dam\  /sire
     \  /
      \ /
       V
      00016
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00017
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date: ???
                                                Last Location: TURA (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
    \      /
   \    /
  dam\  /sire
     \  /
      \ /
       V
      00017
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00018
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ~ 2005
                                                Last Location: DELHI
                                                House Name: Nutei
                                                Tattoo:
                                                Tag/Band:
    \      /
   \    /
  dam\  /sire
     \  /
      \ /
       V
      00018
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00019
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ???
                                                Last Location: TURA (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
    \      /
   \    /
  dam\  /sire
     \  /
      \ /
       V
      00019
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00020
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date: ???
                                                Last Location: AIZAWL
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
    \      /
   \    /
  dam\  /sire
     \  /
      \ /
       V
      00020
  
```

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00021
 =====

WILD



WILD

Sex: Male
 Birth Date: ????
 Last Location: AIZAWL
 House Name: Bankawia
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00022
 =====

WILD



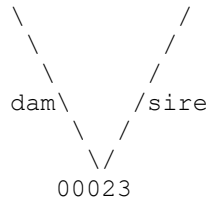
WILD

Sex: Male
 Birth Date: ~ 1999
 Last Location: ITANAGAR
 House Name: LINGGI
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00023
 =====

WILD



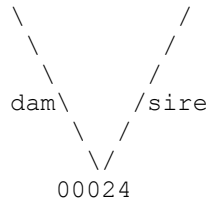
WILD

Sex: Female
 Birth Date: ~ 1997
 Last Location: ITANAGAR (dead)
 House Name: DELLO
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00024
 =====

WILD



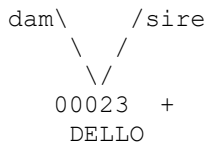
WILD

Sex: Female
 Birth Date: ~ 1997
 Last Location: ITANAGAR
 House Name: YASUM
 Tattoo:
 Tag/Band:

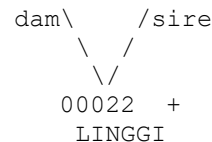
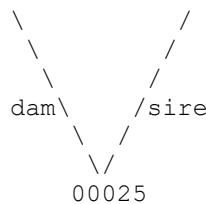
=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00025
 =====

WILD



WILDWILDWILD



Sex: Male
 Birth Date: ~ 2005
 Last Location: ITANAGAR
 House Name: BABY
 Tattoo:
 Tag/Band:

+ Wild-caught...

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00026
 =====

WILD



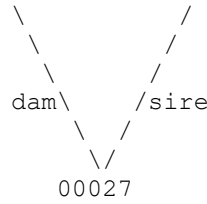
WILD

Sex: Male
 Birth Date: ~ 1997
 Last Location: ITANAGAR
 House Name: LAGDER
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00027
 =====

WILD



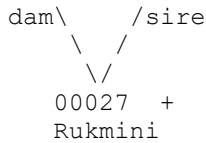
WILD

Sex: Female
 Birth Date: ~ 1997
 Last Location: ITANAGAR (dead)
 House Name: Rukmini
 Tattoo:
 Tag/Band:

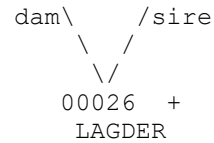
=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00028
 =====

WILD



WILDWILDWILD



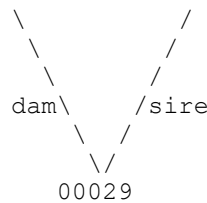
Sex: Male
 Birth Date: ~ 2000
 Last Location: ITANAGAR (dead)
 House Name: nega
 Tattoo:
 Tag/Band:

+ Wild-caught...

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00029
 =====

WILD



WILD

Sex: Male
 Birth Date: ~ 1997
 Last Location: ITANAGAR
 House Name: Corneal opacity
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00030
 =====

		WILD		WILD
			dam\	/sire
			\	/
WILD			00029 +	
			Corneal	
			Sex: Female	
			Birth Date: ~ 2001	
			Last Location: ITANAGAR	
			House Name: YAPA	
			Tattoo:	
			Tag/Band:	
			/	
			\	
			dam\	/sire
			\	/
			00030	

+ Wild-caught...

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00031
 =====

		WILD		WILD
			dam\	/sire
			\	/
			00031	
			Sex: Male	
			Birth Date: ????	
			Last Location: ITANAGAR (dead)	
			House Name: mithum	
			Tattoo:	
			Tag/Band:	

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00032
 =====

		WILD		WILD
			dam\	/sire
			\	/
			00032	
			Sex: Male	
			Birth Date: ~ 2005	
			Last Location: ITANAGAR	
			House Name: TAPING	
			Tattoo:	
			Tag/Band:	

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00033
 =====

		WILD		WILD
			dam\	/sire
			\	/
			00033	
			Sex: Male	
			Birth Date: ~ 2006	
			Last Location: MIAO	
			House Name: Pintu	
			Tattoo:	
			Tag/Band:	

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00034
 =====

		WILD		WILD
			dam\	/sire
			\	/
			00034	
			Sex: Male	
			Birth Date: ~ 2005	
			Last Location: DELHI	
			House Name: DEOMALI	
			Tattoo:	
			Tag/Band:	

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00035
 =====

WILD

WILD



Sex: Male
 Birth Date: ????
 Last Location: TURA (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00036
 =====

WILD

WILD



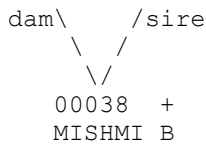
Sex: Male
 Birth Date: ~ Feb 2005
 Last Location: SEPAHIJAL (dead)
 House Name: narayan
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

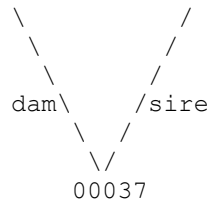
Studbook Number: 00037
 =====

WILD

WILD



WILD



Sex: Male
 Birth Date: ~ 2004
 Last Location: ITANAGAR
 House Name: CUTE
 Tattoo:
 Tag/Band:

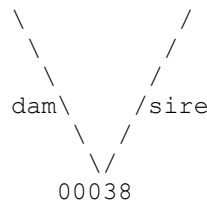
+ Wild-caught...

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00038
 =====

WILD

WILD



Sex: Female
 Birth Date: ~ 1999
 Last Location: ITANAGAR
 House Name: MISHMI BAIDEO
 Tattoo:
 Tag/Band:

=====

Taxon Name: HOOLOCK HOOLOCK

=====

Studbook Number: 00039

=====

<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>00027 + Rukmini</p>	<p>WILDWILDWILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>dam\ /sire</p> <p> \ /</p> <p>00039</p>	<p>dam\ /sire</p> <p> \ /</p> <p>00026 + LAGDER Sex: Female Birth Date: 5 Jul 2008 Last Location: SEPAHIJAL (dead) House Name: ANGA Tattoo: Tag/Band:</p>
--	--	---

+ Wild-caught...

=====

Taxon Name: HOOLOCK HOOLOCK

=====

Studbook Number: 00040

=====

<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>00024 + YASUM</p>	<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>dam\ /sire</p> <p> \ /</p> <p>00040</p>	<p>WILD WILDWILDWILD</p> <p>dam\ /sire dam\ /sire</p> <p> \ / \ / /</p> <p>00027 + 00026 + Rukmini LAGDER</p> <p>dam\ /sire</p> <p> \ /</p> <p>00028 + nega Sex: Male Birth Date: 22 Sep 2008 Last Location: ITANAGAR House Name: JIMMY Tattoo: Tag/Band:</p>
--	--	--

+ Wild-caught...

=====

Taxon Name: HOOLOCK HOOLOCK

=====

Studbook Number: 00041

=====

<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>00041</p>	<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>00041</p>	<p>Sex: Unknown Birth Date: ???? Last Location: AIZAWL House Name: Tattoo: Tag/Band:</p>
--	--	--

=====

Taxon Name: HOOLOCK HOOLOCK

=====

Studbook Number: 00042

=====

<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>00042</p>	<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>00042</p>	<p>Sex: Female Birth Date: ~ Jul 2006 Last Location: ASSAM House Name: MUNNI Tattoo: Tag/Band:</p>
--	--	--

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00043
 =====

WILD

WILD



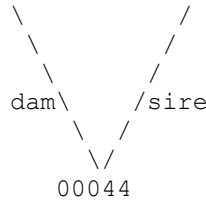
Sex: Female
 Birth Date: ~ Nov 2001
 Last Location: MIAO
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00044
 =====

WILD

WILD



Sex: Male
 Birth Date: ~ 1972
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00045
 =====

WILD

WILD



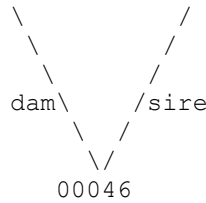
Sex: Female
 Birth Date: ~ 1978
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00046
 =====

WILD

WILD



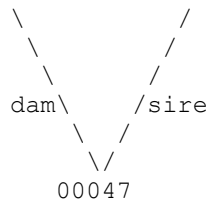
Sex: Male
 Birth Date: ~ 1978
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00047
 =====

WILD

WILD



Sex: Male
 Birth Date: ~ 1979
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00048
=====
WILD                                               WILD
                                                Sex: Male
                                                Birth Date: ~ 1979
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
\         /
 \       /
  dam\  /sire
       \ /
        00048
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00049
=====
WILD                                               WILD
                                                Sex: Female
                                                Birth Date: ~ 1979
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
\         /
 \       /
  dam\  /sire
       \ /
        00049
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00050
=====
WILD                                               WILD
                                                Sex: Male
                                                Birth Date: ~ 1981
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
\         /
 \       /
  dam\  /sire
       \ /
        00050
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00051
=====
WILD                                               WILD
                                                Sex: Female
                                                Birth Date: ~ 1981
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
\         /
 \       /
  dam\  /sire
       \ /
        00051
    
```

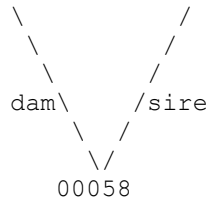
```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00052
=====
WILD                                               WILD
                                                Sex: Female
                                                Birth Date: ~ 1978
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
\         /
 \       /
  dam\  /sire
       \ /
        00052
    
```


=====
 Taxon Name: HOOLOCK HOOLOCK

Studbook Number: 00058
 =====

WILD



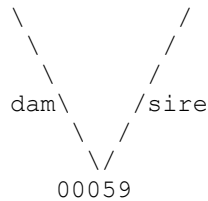
WILD

Sex: Male
 Birth Date: ~ 1978
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK

Studbook Number: 00059
 =====

WILD



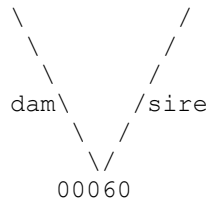
WILD

Sex: Male
 Birth Date: ~ 1980
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK

Studbook Number: 00060
 =====

WILD



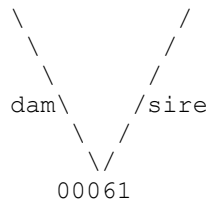
WILD

Sex: Female
 Birth Date: ~ 1983
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK

Studbook Number: 00061
 =====

WILD



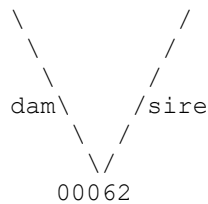
WILD

Sex: Male
 Birth Date: ~ 1984
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK

Studbook Number: 00062
 =====

WILD



WILD

Sex: Male
 Birth Date: ~ 1982
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00063
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date: ~ 1985
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
    \      /
   \  dam /
    \    /
     \  /
      \ /
       V
      00063
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00064
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date: ???
                                                Last Location: LUCKNOW
                                                House Name: KALU
                                                Tattoo:
                                                Tag/Band:
    \      /
   \  dam /
    \    /
     \  /
      \ /
       V
      00064
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00065
=====
WILD          dam\      /sire                    WILDWILDWILD          dam\      /sire
              \    /                               \    /
               \  /                               \  /
                V                               V
              00060 +                          00061 +
                                                Sex: Male
                                                Birth Date: 10 Dec 1987
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
    \      /
   \  dam /
    \    /
     \  /
      \ /
       V
      00065
  
```

+ Wild-caught...

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00066
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date: ~ 1987
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
    \      /
   \  dam /
    \    /
     \  /
      \ /
       V
      00066
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00067
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ~ 1986
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
    \      /
   \  dam /
    \    /
     \  /
      \ /
       V
      00067
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00068
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ~ 1988
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
\         /
 \       /
  dam\  /sire
       \ /
        00068
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00069
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ~ 1988
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
\         /
 \       /
  dam\  /sire
       \ /
        00069
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00070
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ~ 1987
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
\         /
 \       /
  dam\  /sire
       \ /
        00070
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00071
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date: ~ 1987
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
\         /
 \       /
  dam\  /sire
       \ /
        00071
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00072
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date: ~ 1988
                                                Last Location: ASSAM (dead)
                                                House Name:
                                                Tattoo:
                                                Tag/Band:
\         /
 \       /
  dam\  /sire
       \ /
        00072
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                               Studbook Number: 00073
=====
WILD                                                       WILD
                                                           Sex: Female
                                                           Birth Date: ~ 1987
                                                           Last Location: ASSAM (dead)
                                                           House Name:
                                                           Tattoo:
                                                           Tag/Band:
    \
     \
dam \   /sire
     \   /
      \ /
       V
      00073
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                               Studbook Number: 00074
=====
WILD                                                       WILD
                                                           Sex: Male
                                                           Birth Date: ~ 1988
                                                           Last Location: ASSAM (dead)
                                                           House Name:
                                                           Tattoo:
                                                           Tag/Band:
    \
     \
dam \   /sire
     \   /
      \ /
       V
      00074
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                               Studbook Number: 00075
=====
WILD                                                       WILD
                                                           Sex: Male
                                                           Birth Date: ~ 1987
                                                           Last Location: ASSAM (dead)
                                                           House Name:
                                                           Tattoo:
                                                           Tag/Band:
    \
     \
dam \   /sire
     \   /
      \ /
       V
      00075
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                               Studbook Number: 00076
=====
WILD                                                       WILD
                                                           Sex: Male
                                                           Birth Date: ???
                                                           Last Location: IMPHAL (dead)
                                                           House Name:
                                                           Tattoo:
                                                           Tag/Band:
    \
     \
dam \   /sire
     \   /
      \ /
       V
      00076
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                               Studbook Number: 00077
=====
WILD                                                       WILD
                                                           Sex: Female
                                                           Birth Date: ~ 1997
                                                           Last Location: IMPHAL (dead)
                                                           House Name:
                                                           Tattoo:
                                                           Tag/Band:
    \
     \
dam \   /sire
     \   /
      \ /
       V
      00077
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00078
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date:   ???
Last Location: LUCKNOW (dead)
House Name: Rani
Tattoo:
Tag/Band:

      \      /
      dam\  /sire
           \ /
            V
           00078
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00079
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date:   ???
Last Location: MIAO
House Name:
Tattoo:
Tag/Band:

      \      /
      dam\  /sire
           \ /
            V
           00079
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00080
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date:   ???
Last Location: INDIA
House Name: yapi
Tattoo:
Tag/Band:

      \      /
      dam\  /sire
           \ /
            V
           00080
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00081
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date:   ~ 1997
Last Location: ITANAGAR
House Name: Mr. Batt
Tattoo:
Tag/Band:

      \      /
      dam\  /sire
           \ /
            V
           00081
    
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00082
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date:   ~ 1999
Last Location: ASSAM
House Name: BABU
Tattoo:
Tag/Band:

      \      /
      dam\  /sire
           \ /
            V
           00082
    
```



```

=====
Taxon Name: HOOLOCK HOOLOCK                               Studbook Number: 00083
=====
WILD                                                         WILD
                                                         Sex: Female
                                                         Birth Date: ~ 2006
                                                         Last Location: SEPAHIJAL
                                                         House Name: BawihBawihi
                                                         Tattoo:
                                                         Tag/Band:

      \      /
      dam\  /sire
           \ /
           00083
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                               Studbook Number: 00084
=====
WILD                                                         WILD
                                                         Sex: Female
                                                         Birth Date: ~ 2006
                                                         Last Location: AIZAWL
                                                         House Name: BULI
                                                         Tattoo:
                                                         Tag/Band:

      \      /
      dam\  /sire
           \ /
           00084
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                               Studbook Number: 00085
=====
WILD                                                         WILD
                                                         Sex: Male
                                                         Birth Date: ~ Apr 2008
                                                         Last Location: ASSAM
                                                         House Name: HARUBABU
                                                         Tattoo:
                                                         Tag/Band:

      \      /
      dam\  /sire
           \ /
           00085
  
```

```

=====
Taxon Name: HOOLOCK HOOLOCK                               Studbook Number: 00086
=====
WILD                                                         WILDWILDWILD
dam\      /sire
 \      /
  00023 +
  DELLO

      \      /
      dam\  /sire
           \ /
           00086

      \      /
      dam\  /sire
           \ /
           00022 +
           LINGGI
           Sex: Female
           Birth Date: 5 Oct 2008
           Last Location: ITANAGAR
           House Name: TORAM
           Tattoo:
           Tag/Band:

+ Wild-caught...
  
```

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00087
 =====

WILD

dam\ /sire
 \
 \
 00038 +
 MISHMI B

WILDWILDWILD

dam\ /sire
 \
 \
 dam\ /sire
 \
 \
 00087

dam\ /sire
 \
 \
 00029 +
 Corneal
 Sex: Male
 Birth Date: 29 Jun 2009
 Last Location: ITANAGAR (dead)
 House Name: DAOLI
 Tattoo:
 Tag/Band:

+ Wild-caught...

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00088
 =====

WILD

dam\ /sire
 \
 \
 dam\ /sire
 \
 \
 00088

WILD

Sex: Male
 Birth Date: ~ Dec 2008
 Last Location: MIAO
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00089
 =====

WILD

dam\ /sire
 \
 \
 dam\ /sire
 \
 \
 00089

WILD

Sex: Male
 Birth Date: ????
 Last Location: ITANAGAR
 House Name: innow
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00090
 =====

WILD

dam\ /sire
 \
 \
 dam\ /sire
 \
 \
 00090

WILD

Sex: Male
 Birth Date: ~ Jan 2010
 Last Location: MIAO
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00091
 =====

WILD

dam\ /sire
 \
 \
 dam\ /sire
 \
 \
 00091

WILD

Sex: Male
 Birth Date: ????
 Last Location: AIZAWL
 House Name: Boboa
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00092
 =====

WILD

WILD



Sex: Female
 Birth Date: ~ 2009
 Last Location: ASSAM
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00093
 =====

WILD

WILD



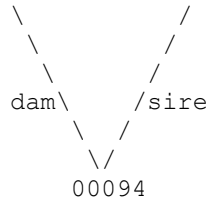
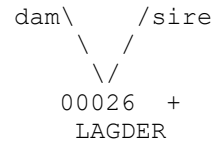
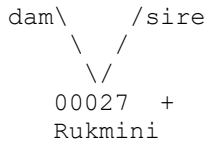
Sex: Female
 Birth Date: ~ Jan 2010
 Last Location: IMPHAL
 House Name: KALI
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00094
 =====

WILD

WILDWILDWILD



Sex: Male
 Birth Date: 9 Aug 2010
 Last Location: ITANAGAR (dead)
 House Name: BOGI/ATI-OPAN
 Tattoo:
 Tag/Band:

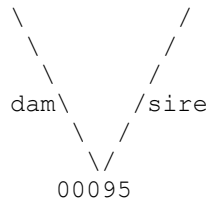
+ Wild-caught...

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00095
 =====

WILD

WILD



Sex: Male
 Birth Date: ~ 2007
 Last Location: KOHIMA
 House Name: Rocky
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00096
 =====

WILD

WILD



Sex: Male
 Birth Date: ~ May 2009
 Last Location: MIAO
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00097
 =====

WILD

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 00023 +
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 00097

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 00022 +
 LINGGI

Sex: Unknown
 Birth Date: 25 Dec 2010
 Last Location: ITANAGAR
 House Name: JISU
 Tattoo:
 Tag/Band:

+ Wild-caught...

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00098
 =====

WILD

dam\ /sire
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 00098

WILD

Sex: Female
 Birth Date: ????
 Last Location: AIZAWL
 House Name: Chhuri
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00099
 =====

WILD

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 00099

WILD

Sex: Male
 Birth Date: ~ 2009
 Last Location: SEPAHIJAL (dead)
 House Name: KRISHNA
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
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Studbook Number: 00100
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WILD

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 00005 +
 BUANGI

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 00100

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 00016 +
 BAWIHA

Sex: Male
 Birth Date: 5 Jun 2011
 Last Location: AIZAWL
 House Name: Zara
 Tattoo:
 Tag/Band:

+ Wild-caught...

=====

Taxon Name: HOOLOCK HOOLOCK

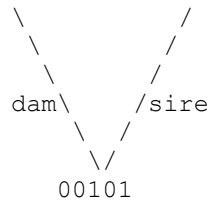
=====

Studbook Number: 00101

=====

WILD

WILD



Sex: Female
 Birth Date: ????
 Last Location: ITANAGAR (dead)
 House Name: MUNUMUNU
 Tattoo:
 Tag/Band:

=====

Taxon Name: HOOLOCK HOOLOCK

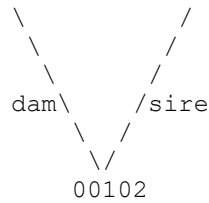
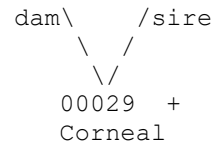
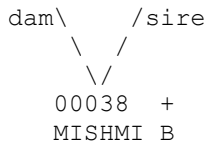
=====

Studbook Number: 00102

=====

WILD

WILDWILDWILD



Sex: Unknown
 Birth Date: 18 Sep 2011
 Last Location: ITANAGAR
 House Name: NAGAR
 Tattoo:
 Tag/Band:

+ Wild-caught...

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Taxon Name: HOOLOCK HOOLOCK

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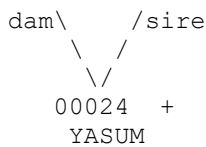
Studbook Number: 00103

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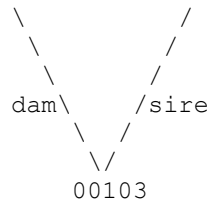
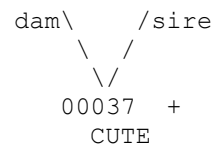
WILD

WILD

WILD dam\ /sire



00038 + MISHMI B



Sex: Unknown
 Birth Date: 30 Jun 2012
 Last Location: ITANAGAR
 House Name: SONU
 Tattoo:
 Tag/Band:

+ Wild-caught...

=====

Taxon Name: HOOLOCK HOOLOCK

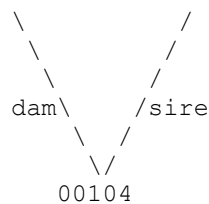
=====

Studbook Number: 00104

=====

WILD

WILD



Sex: Female
 Birth Date: ~ 2004
 Last Location: ASSAM
 House Name: BABLI
 Tattoo:
 Tag/Band:

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 Taxon Name: HOOLOCK HOOLOCK
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 Studbook Number: 00105
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WILD

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 MUNUMUNU

WILDWILDWILD

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 00105

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 00026 +
 LAGDER
 Sex: Unknown
 Birth Date: 26 Mar 2013
 Last Location: ITANAGAR
 House Name: ITA
 Tattoo:
 Tag/Band:

+ Wild-caught...

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 Taxon Name: HOOLOCK HOOLOCK
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 Studbook Number: 00106
 =====

WILD

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 00005 +
 BUANGI

WILDWILDWILD

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 00106

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 00016 +
 BAWIHA
 Sex: Unknown
 Birth Date: 16 Sep 2013
 Last Location: AIZAWL
 House Name:
 Tattoo:
 Tag/Band:

+ Wild-caught...

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 Taxon Name: HOOLOCK HOOLOCK
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 Studbook Number: 00107
 =====

WILD

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 00107

WILD

Sex: Female
 Birth Date: ~ 2011
 Last Location: KOHIMA
 House Name: Two-fi
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

=====
 Studbook Number: 00108
 =====

WILD

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 00108

WILD

Sex: Male
 Birth Date: ????
 Last Location: IMPHAL
 House Name: MAKIMACHA
 Tattoo:
 Tag/Band:

=====

Taxon Name: HOOLOCK HOOLOCK

=====

Studbook Number: 00109

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<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>00038 + MISHMI B</p>	<p>WILDWILDWILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>dam\ /sire</p> <p> \ /</p> <p>00109</p>	<p>dam\ /sire</p> <p> \ /</p> <p>00029 + Corneal</p> <p>Sex: Unknown Birth Date: 8 Aug 2015 Last Location: ITANAGAR House Name: NEHA Tattoo: Tag/Band:</p>
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+ Wild-caught...

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Taxon Name: HOOLOCK HOOLOCK

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Studbook Number: 00110

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<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>00030 + YAPA</p>	<p>WILD WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>00029 + Corneal</p> <p>dam\ /sire</p> <p> \ /</p> <p>dam\ /sire</p> <p> \ /</p> <p>00110</p>	<p>WILD WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>00081 + Mr. Batt</p> <p>Sex: Unknown Birth Date: 21 Apr 2015 Last Location: ITANAGAR House Name: PULU Tattoo: Tag/Band:</p>
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+ Wild-caught...

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Taxon Name: HOOLOCK HOOLOCK

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Studbook Number: 00111

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<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>dam\ /sire</p> <p> \ /</p> <p>00111</p>	<p>WILD</p> <p>Sex: Male Birth Date: ???? Last Location: ASSAM House Name: MANSE Tattoo: Tag/Band:</p>
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Taxon Name: HOOLOCK HOOLOCK

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Studbook Number: 00112

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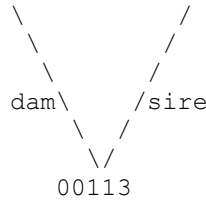
<p>WILD</p> <p>dam\ /sire</p> <p> \ /</p> <p>dam\ /sire</p> <p> \ /</p> <p>00112</p>	<p>WILD</p> <p>Sex: Female Birth Date: ???? Last Location: ASSAM House Name: LILEE Tattoo: Tag/Band:</p>
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NATIONAL STUDBOOK OF NILGIRI LANGUR (*TRACHYPITHECUS JOHNI*) – III EDITION

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00113
 =====

WILD



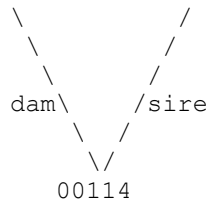
WILD

Sex: Male
 Birth Date: ????
 Last Location: ASSAM
 House Name: DEEPU
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00114
 =====

WILD



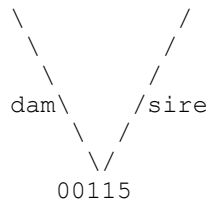
WILD

Sex: Male
 Birth Date: ????
 Last Location: KOHIMA
 House Name: JHONNY
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00115
 =====

WILD



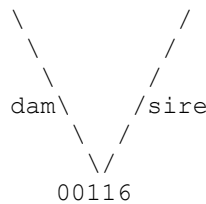
WILD

Sex: Male
 Birth Date: ????
 Last Location: KOHIMA
 House Name: HOLLY
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00116
 =====

WILD



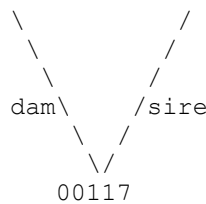
WILD

Sex: Male
 Birth Date: ????
 Last Location: AIZAWL
 House Name: CHARLIE
 Tattoo:
 Tag/Band:

=====
 Taxon Name: HOOLOCK HOOLOCK
 =====

Studbook Number: 00117
 =====

UNK



UNK

Sex: Female
 Birth Date: 29 Oct 1991
 Last Location: ASSAM
 House Name: SITA
 Tattoo:
 Tag/Band:

Location Glossary

Mnemonic	Location
AHMEDABAD	Kamla Nehru Zoological Garden, Ahmedabad
ASSAM	Assam State Zoo cum Botanical Garden, Guwahati
GUINDY	Guindy Children's Park, Chennai
HYDERABAD	Nehru Zoological Park, Hyderabad
INDIA	All wild origin specimens
JUNAGADH	Sakkarbaugh Zoo, Junagadh
KANPUR	Kanpur Zoological Park, Kanpur
MADRAS	Arignar Anna Zool. Park, Chennai
MYSORE	Sri Chamarajendra Zoological Garden, Mysuru
NANDANKAN	Nandankanan Biological Park, Bhubaneswar
TRIVANDRU	Thiruvananthpuram Zoo, Thiruvananthpuram
VISAKAPAT	Indira Gandhi Zoological Park, Visakapatnam