

NATIONAL STUDBOOK

Hoolock Gibbon (*Hoolock hoolock*) Edition II

Published as a part of the Central Zoo Authority sponsored project titled
“Development and maintenance of studbooks for selected endangered species in Indian zoos”

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Central Zoo Authority

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1. Aizawl Zoo, Aizawl
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3. Biological Park, Itanagar
4. Lady Hydari Park Animal Land, Shillong
5. Lucknow Zoological Park, Lucknow
6. Manipur Zoological Garden, Imphal
7. Miao Mini Zoo, Miao
8. Mini Zoo, Roing
9. Nagaland Zoological Park, Dimapur
10. National Zoological Park, New Delhi
11. Sepahijala Zoological Park, Agartala
12. Tura Zoo, Akhongini Tura

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Authors

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Species Biology

Gibbons comprise the largest group of apes consisting of 16 species belonging to four genera (*Nomascus*, *Hylobates*, *Symphalangus*, and *Hoolock*) native to South and Southeast Asia.

Taxonomy

Phylum: Chordata
Sub-phylum: Vertebrata
Class: Mammalia
Order: Primates
Family: Hylobatidae
Genus: *Hoolock* (Mootnick and Groves 2005)
Species: *hoolock hoolock* (Harlan 1834)



The species was first described as *Simia hoolock* by Harlan (1834). Over the years, a number of different names for the species have appeared in literature. Groves (1972) placed *hoolock* in the subgenus *Hylobates* based on anatomical, vocal and karyotypic comparisons with other members of the subgenus *Hylobates*. Prouty *et al.* (1983) proposed *Bunopithecus* as a sub-generic division of genus *Hylobates* containing two species *sericus* and *hoolock* (with *hoolock* consisting of 2 subspecies *hoolock* and *leuconedys*).

Mootnick and Groves (2005) revised the taxonomy of Hoolock gibbons. Two species were recognized under this classification: *Hoolock hoolock* found west of the Chindwin River and *Hoolock leuconedys* (Groves, 1967) towards its east. The two gibbons are considered to be distinct species due to features in their fur coloration as described by Groves (1967, 1972).

Physical characteristics

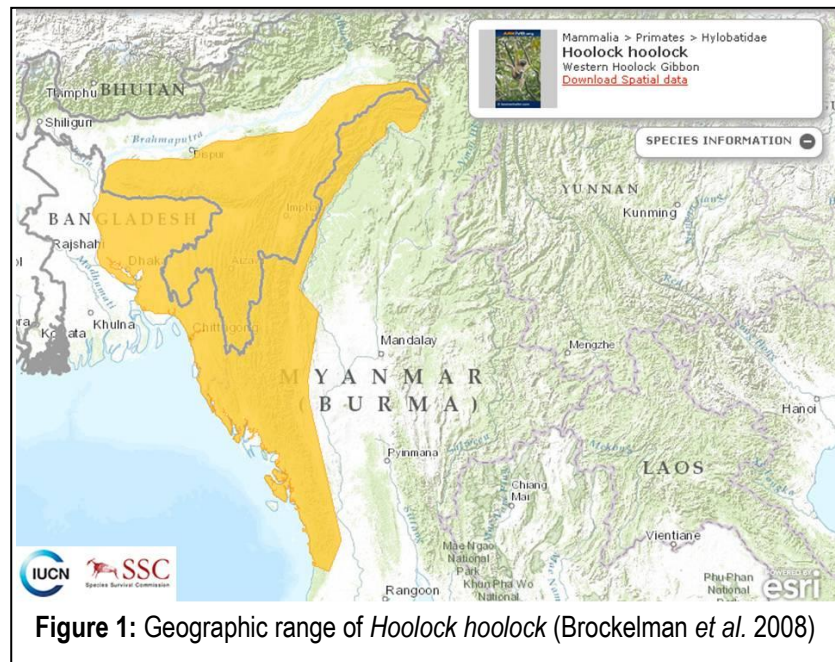
Hoolock gibbon adults exhibit distinct sexual dimorphism in pelage colouration (Schultz 1973), the males are black overall and the female becomes varying shades of brown and fawn at maturity. Both *H. hoolock* and *H. leuconedys* infants are born with a pale brown natal coat (infants are nearly white) similar in colouration to that of adult females. Infants of both sexes turn black. The colour change in females takes place during later phases of maturation in comparison to females of other species of the subgenus (Groves 1972). Female hoolock gibbons produce a thermoregulatory orange coloured water soluble secretion on the entire body during high humidity or extreme heat that is similar to the crested gibbons (Genus: *Nomascus*) (Mootnick and Groves 2005). The two species can be differentiated by differences in body coloration; the details of the same are provided below.

In the western species, hands and feet of adult females are generally the same colour as the body hair, with a black fringe on the fingers, toes, and the edge of the hands; the genital region is black in colour. In the eastern species, hands and feet of adult females are slightly paler than the limbs and may have a few white or black hairs and the genital region is similar in colour to the surrounding area (Mootnick and

Groves 2005). The eastern hoolock gibbon (*Hoolock leuconedys*) male can be differentiated from the western species (*Hoolock hoolock*) by its grizzled silver coloured chest; a silver genital tuft and the white brow streaks are widely separated in adult males and juveniles of both sexes instead of being partially joined in the midline as in *Hoolock hoolock* (Mootnick and Groves 2005).

Geographic distribution

Western hoolock gibbons (*Hoolock hoolock*) have distribution range extending from eastern Bangladesh, through the north-eastern Indian states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura, and north-western part of Myanmar (west of the Chindwin River). The distribution in India was believed to be restricted to south of the Brahmaputra and east of the Dibang (Dingba



Qu) rivers (Choudhury 2001). However, recent studies by Das *et al.* (2006) have recorded the occurrence of the eastern species (*Hoolock leuconedys*) from Lohit district of Arunachal Pradesh, India; a population was further reported from the area between the rivers Dibang and Lohit in lower Dibang valley district of Arunachal Pradesh (Chetry *et al.* 2007), and from the Sadiya area of Assam (Chetry and Chetry 2011). The boundary between the two species of *Hoolock* is the Chindwin River, which flows into the Irrawady River. The two species are known to hybridize at a zone located towards the headwaters in the north.

Habitat

The species inhabits mature forest; tropical evergreen forest, the wetter tropical semi-evergreen forests, sub-tropical monsoon evergreen broadleaf forests, and sub-tropical evergreen broadleaf hill or mountain forests. They appear to be less common in deciduous forest and scrub forest, and absent from mangroves (Choudhury 1996; Gittins and Tilson 1984; Lan 1994) and prefer the mixed patches and pockets of evergreen forests (Choudhury 2009).

Western hoolock gibbon home ranges include village woodlands or village orchards, in the villages surrounding Nokrek National Park in the Garo Hills, Meghalaya, and in the Barikuri area in Tinsukia district of eastern Assam (Chetry *et al.* 2007; Choudhury 2001; Kakati 1997). Similar observations were reported of eastern hoolock gibbons living in highly fragmented forest in the southeast boundary of Mehao Wildlife Sanctuary, lower Dibang valley district, Arunachal Pradesh, India (Sarma *et al.* 2013).

Hoolock gibbons mostly occur at altitudes of 80-1,500 m (Choudhury 1996; Mukherjee 1986). However, western hoolocks have been recorded up to 2,550 m in Manipur (Choudhury 2001), at elevations of 2,100-2,300 m on the slopes of Mt. Victoria, Chin state (King *et al.* 1995), and up to about 2,600 m on Mt. Saramati in Nagaland of NE-India on the Nagaland-Myanmar border (Choudhury 2006). Throughout its range in these states, the gibbon is sympatric with other primates including the Assamese macaque (*Macaca assamensis*), stump-tailed macaque (*M. arctoides*), pig-tailed macaque (*M. nemestrina*), rhesus macaque (*Macaca mulatta*), capped langur (*Presbytis pileatus*), and slow loris (*Nycticebus coucang*). In Mizoram and perhaps in southwest Manipur, it is also sympatric with Phayre's leaf monkey (*Presbytis phayrei*) (Choudhury 2006).

Feeding ecology

All gibbons are fruit-pulp specialist feeders (Chivers 1984). They have a simple stomach with a limited ability to digest the secondary compounds and toxins present in leaves. Tilson (1979) noted that hoolock gibbons used 43 species of plants as a source of food, whereas up to 101 species were recorded by Ahsan (1994). A variety of food species including *Artocarpus chapalasha*, *Bixa orellana*, *Dipterocarpus* spp., *Syzygium* spp., *Mangifera sylvatica*, *Protium serratum*, *Entada* spp., *Ficus* spp., and *Lagersrtoemia speciosa*, have been reported for hoolocks in Bangladesh (Muzaffar *et al.* 2007). Animal protein is preferred to that from plants during fruit-shortage (Vellayan 1981) as prolonged dependence on leaves has been known to cause nutritional stress, in juvenile gibbons and severely affect the breeding success of adults (Kakati *et al.* 2009).

A study by Islam *et al.* (2013) showed that Western Hoolock gibbons spent maximum portion of their total activity time in feeding (32.30%) followed by foraging (27.90%), resting (23.50%), while social and other activities (calling, playing, territorial, travel, allogrooming, aggression, sexual activities) accounted for only 16.30% of their activity budgets.

Locomotion

Gibbons are specialized for an arboreal mode of life with specialized adaptations that enable brachiation and suspensory feeding (Grand 1972). They have long forelimbs with long digits and prehensile feet with flexible ankle joints that enable brachiation (Vereecke and Aerts, 2008) enabling bipedal walking (Crompton *et al.* 2008).

Social organization and behaviour

Gibbon's are primarily monogamous, forming long-lasting pair-bonds, and are typically found in small family groups with a single adult female, a single adult male and one to four offspring (Brockelman *et al.* 1998; Geissmann 1991; Leighton 1987; Reichard and Barelli 2008). However recent studies indicate extra-



pair copulations in hylobatid populations, suggesting the possibility of a more dynamic social system and reproductive strategy followed than originally reported (Palombit 1996; Reichard and Barelli 2008). Patch size is a crucial determinant of gibbon group size with small patches supporting the smallest group sizes (mean 2.5, n = 2 groups), whereas larger groups were found in medium-sized fragments (mean 3.29, n = 24 groups) and large forest-tracts (mean 3.9, n = 28 groups) (Kakati *et al.* 2009).

It is assumed that young adult gibbons are forced to leave their natal groups by way of antagonistic interactions from the same-sex parent (Chivers 1984; Leighton 1987). The young individuals usually leave their groups as a result of peripheralization (Leighton, 1987). Young adults may remain peripheral to neighbouring groups, containing juveniles/sub-adults of opposite-sex in order to attract a mate (Chivers 1984).

Vocal communication

Gibbons exhibit species specific loud, long, stereotyped vocalizations referred to as “calls” (short vocalizations) and “songs” (longer vocalizations) (Haimoff, 1984; Marshall and Sugardjito, 1986). Reports suggest that the song bouts serve to defend territory in females and to guard mates in males (Cowlshaw 1992).

Reproduction

Sexual maturity in both sexes of *Hoolock hoolock* occurs between 6 and 8 year (Tilson 1979) characterized by a fading of the black body coat to the adult colouration in females. Sexual swellings among female Hoolocks are less prominent and have not been reported for the species (Lauppe 2012). The female estrus cycle lasts on average 27.8 days while menstrual blood flow has been documented to last for 2-4 days (Matthews 1946). Matings in hoolock gibbon are usually initiated by the male (Chetry *et al.* 2007); however, proceptive behaviours of the female prior mating has also been reported (Yang 1998). Sexual solicitation behaviours include grooming, playing and moving close to the mate (Cheyne and Chivers 2006). Yang (1998) reported that copulation in captive hoolock gibbons last for 20 seconds while in wild hoolock gibbons the reported time is 36.6 seconds on average (Alfred and Sati 1987; Ahsan 2000). A single infant is born after a gestation period of 180– 240 days (Ahsan 2000).

Table 1: Life-history traits of Hoolock gibbons

Age at sexual maturity	6-8 years (Tilson 1979)
Gestation period	180-240 days (Ahsan 2000)
Birth seasonality	November to March (Sati and Alfred 2001)
Inter-birth interval	2.5–3 years (Cunningham and Mootnick 2009)
Reproductive tenure	10-20 years from the age of sexual maturity (Das <i>et al.</i> 2005)

Threats and conservation measures

The major threats are caused by the destruction, degradation and fragmentation of forests for settled and shifting agriculture, plantations, logging, fuelwood collection, and development projects such as mining, roads, and railways (Chetry *et al.* 2007); and poaching for bush meat and trade (Srivastava

1999; Choudhury 2006). Habitat degradation and poaching have accounted for more than 50% decline in the Hoolock gibbon population in South Asia in the last 50 years (Molur *et al.* 2003).

The species is protected under Schedule I, of the Indian Wildlife (Protection) Act 1972. It is categorized as 'Endangered' A2acd+3cd+4acd based on the IUCN Red List Criteria, 2009. The western hoolock gibbon was designated as one of the top 10 threatened gibbon taxa of the world in a resolution taken in the gibbon symposium of the Congress of the International Primatological Society at Beijing in 2002.

Status in Captivity

The captive population of Hoolock gibbons is maintained only in India (ZIMS data current as on 25 October 2014) and records indicate a total of 103 captive individuals housed during 1980-2014. The species has been included in the list of species identified for Conservation Breeding by the Central Zoo Authority, India. The coordinating zoo identified for the species in India is Biological Park, Itanagar while the participating zoos are Aizawl Zoo, Aizawl, Assam State Zoo cum Botanical Garden, Guwahati and Sepahijala Zoological Park, Agartala. The total historical population housed in different Indian zoos is presented in Table 2.

Table 2: Status of Hoolock gibbons in Indian zoos

Location	Total no. of individuals (M.F.U)	Living Individuals (M.F.U)	Time span during which Hoolock gibbons were kept (years)	Births (M.F.U)	Deaths (M.F.U)
Aizawl	7.7.4	3.5.1	2000-15 (16)	1.0.1	2.0.2
Assam	20.18.0	2.3.0	1980-15 (36)	1.0.0	18.15.0
Dacca	1.1.0	0.0.0	1982-86 (5)	1.1.0	0.0.0
Delhi	2.2.0	1.2.0	1990-15 (26)	0.0.0	1.0.0
Dimapur	1.1.0	1.1.0	2010-15 (6)	0.0.0	0.0.0
Itanagar	15.8.5	9.3.5	2007-15 (9)	3.1.5	4.3.0
Lucknow	1.1.0	1.0.0	1987-15 (29)	0.0.0	0.1.0
Manipur	2.1.0	1.0.0	1997-15 (19)	0.0.0	1.1.0
Miao	4.3.0	3.1.0	2002-15 (14)	0.0.0	0.0.0
Roing	0.0.1	0.0.0	2001-04 (4)	0.0.0	0.0.1
Sepahijala	2.5.0	1.2.0	1996-15 (20)	0.0.0	1.3.0
Shillong	3.1.0	0.0.0	2005-08 (4)	0.0.0	0.0.0
Tura	2.1.0	0.0.0	2005-08 (4)	0.0.0	2.1.0

Methods

Individual history records were collected by means of questionnaires, zoo visits and from the websites of CZA and ZIMS (Zoological Information Management System). Questionnaires were sent to the institutions housing Hoolock gibbons 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 PMx v 1.2 (Ballou *et al.* 2011) for further analysis.

Scope of the studbook and data quality

The first edition of the studbook (Srivastav and Nigam 2009) included a total of 43 specimens and 40 living specimens at 9 locations. This edition of the studbook includes information as provided by holding institutions till 31st March 2015 with regard to their collections.

The quality of data available for developing the studbook is summarized in Figure 3. Of the 107 specimens recorded in the studbook, age of 86 individuals was available. Of these 72 were wild-born while 14 were captive-born individuals. Parentage records were available for 12 captive- and 3 wild- born individuals. Dates of capture/ acquisition were available for 86 out of 93 wild-born individuals while death dates were available for 53 out of 56 recorded mortalities.

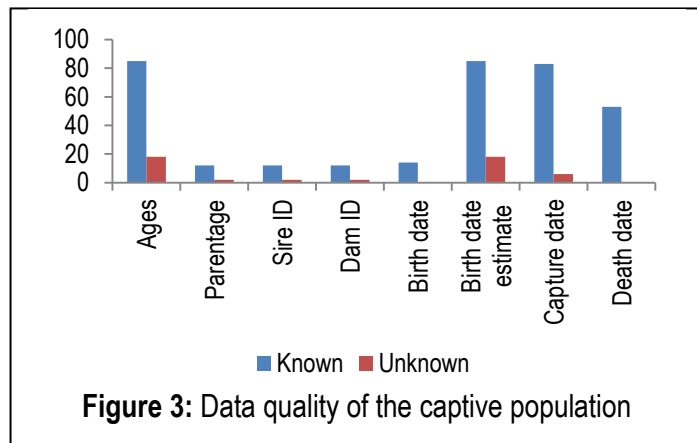


Figure 3: Data quality of the captive population

ANALYSIS

Demography

Historical population

Census trends: A total of 107 individuals (54.43.10) are registered in the National Studbook. This includes 93 (48.41.4) wild-born and 14 (6.2.6) captive-born individuals. Figure 4 shows the population growth of the Indian Hoolock gibbon population over the period from 1980 to 2015. The population remained small during the initial 26 years with a median of only five individuals per year ($5.48_{\text{Mean} \pm 2.04\text{SD}}$). In subsequent years, the population size has increased and reached a total of 45 ($22.17.6$) individuals as on March 2015. The growth of the population post 2006 was caused by the acquisition of a large proportion of wild-born individuals ($n=35$). The first documented captive birth occurred in 1982. Since then, the contribution of captive-births to the population has been very small with a median of only 1 (2.4 ± 2.79) per year. Figure 5 shows the sex-based census trend in the population. The figure

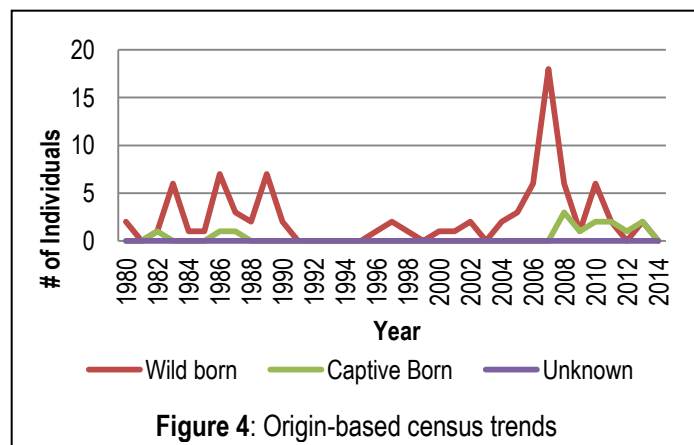


Figure 4: Origin-based census trends

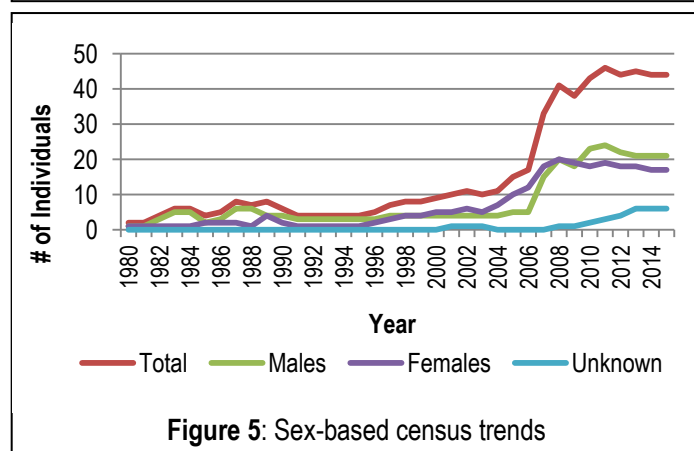


Figure 5: Sex-based census trends

indicates the presence of an equal proportion of both sexes in the population till 2000. From 2000 - 2006 the proportion of females in the population increased both due to captive births and acquisitions from the wild. Since 2006, acquisition of 25 wild-born males in comparison to 15 wild-born females led to an increase in the number of males in proportion to females. This has resulted in a male biased sex-ratio in both the historical (1.26:1) as well as the living population (1.29:1). The historical population is summarized in table 3 below and the specimen-wise details of the historical population are presented in Annexure I.

Table 3: Summary of the historical population

	Males	Females	Unknown	Total
Total studbook size	54	43	10	107
Total number of acquisitions from wild	48	41	4	93
Total number of births	6	2	6	14
Total number of deaths	29	24	3	56
Total number of lost to follow up (Ltf)	3	1	1	5
Total number of escaped individuals	0	1	0	1
Total number of breeding individuals	7	7	0	14
Wild-born that have bred	7	7	0	14
Captive-born that have bred	0	0	0	0

Living population

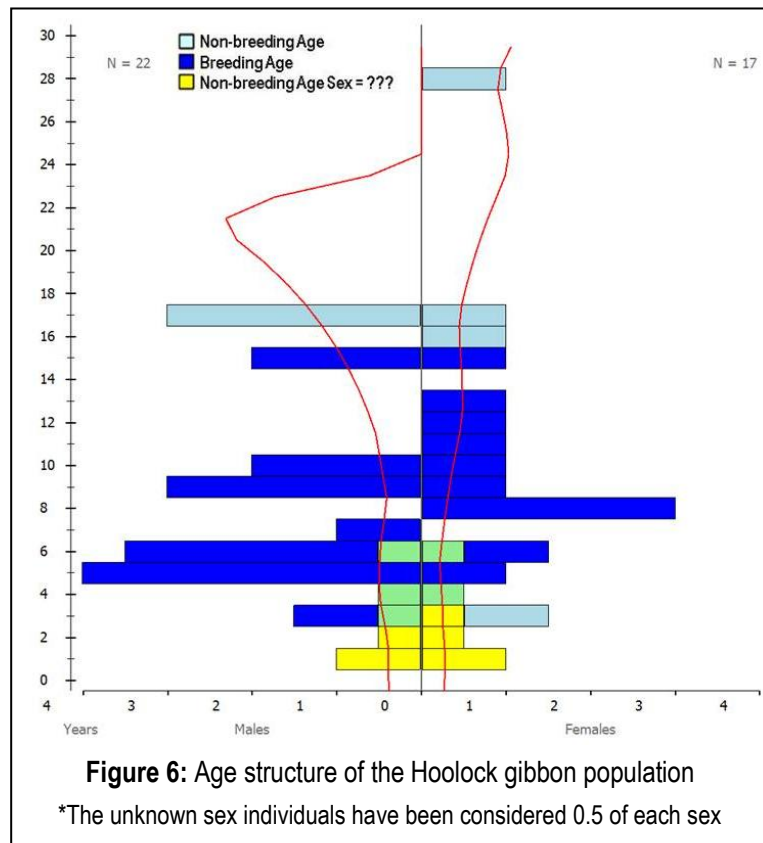
The living population consists of 45 (22.17.6) and includes six breeding pairs. The living population is summarized in table 4 and details are presented in Annexure II.

Table 4: Summary of the living captive population

	Males	Females	Unknown	Total
Total no. of living individuals	22	17	6	45
Total number of wild-born individuals	20	15	0	35
Total number of captive-born individuals	2	2	6	10
Total number of breeding individuals	5	3	0	8
Wild-born that have bred	5	3	0	8
Captive-born that have bred	0	0	0	0

Age and sex structure

The age-sex structure of the Hoolock gibbon population (Figure 6) shows an irregular pyramid with few individuals in the reproductively senescent age classes and a large proportion of equal numbers in either sex in the reproductively active or pre-reproductive age classes. This however, is an outcome of inclusion of a large number of wild origin specimens in these age classes that are yet to reproduce. The population can; however, reproduce at a fast rate and achieve its target size if a large proportion of specimens in the pre-reproductive and reproductive age classes start reproducing despite the high age of sexual maturity (6 – 8 years) and long inter-birth interval (2 years)



Life table and population growth rates

Life table rates represent age-specific vital rates over a period of time and across individuals. These values are obtained from demographic data of the individuals (living and dead) in the population. Of particular importance are the age-specific mortality (Q_x) and fecundity (M_x) rates that summarize the vital characteristics of the population and are used to determine the future growth rates of the population. The current population includes however, includes only a few known age individuals and life table analyses carried out have only a limited accuracy and are excluded from the current studbook. Population growth rates, generation time and projected number of individuals after 20 years are however summarized in table 5. These rates presented here are only indicative in nature and are likely to vary significantly as more information on dates of entry and exit of specimens becomes available from the captive population. Both

the intrinsic rate of change (r) and the proportional change in population size from one year to the next (λ) indicate a negative growth rate. The mean generation time averaged for both sexes was 12 years.

Table 5: Life-table summary

	Male	Female	Total
Instantaneous rate of change (r)	-0.155	-0.124	-0.140
Population growth rate (λ)	0.857	0.883	0.870
Mean generation time (T)	11.7	12.3	12
N at 20 years	3	6	9

Population projections

The projected population growth from observed birth and death rates are depicted in Figure 7. Based on the reproduction and survival rates for each individual, the population is projected to decrease over time. The poor breeding success as a consequence of poor survival of individuals in the breeding age-classes causes a decrease in the projected N over a period of 20 years. The current population holds a considerable proportion of wild-born animals but the rate is declining as a consequence of aging of wild-born individuals and the decrease in acquisitions from the wild in the recent years (2009-2015). The male and female population sizes are projected to decrease to n=3 and n=6 respectively.

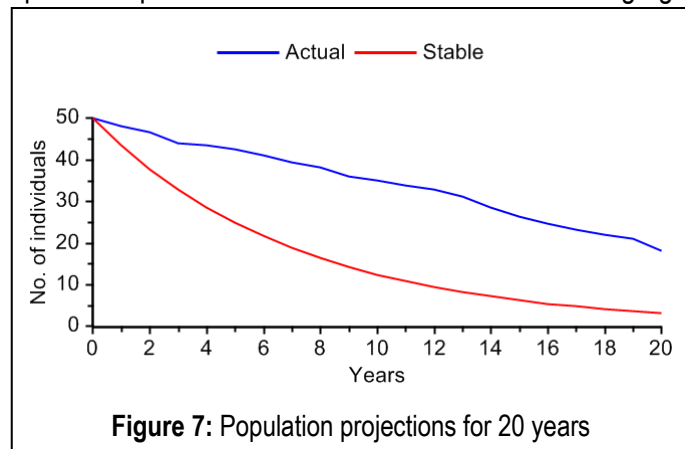


Figure 7: Population projections for 20 years

Genetic analysis

The historical population consists of 93 wild-born specimens of which 14 (7.7) bred at least once, 12 known founders are represented in the living population, 46 (23.20.3) died without breeding and 25 (14.11) have not bred yet. Additionally

5 (3.1.1) were lost to follow up and 1 (0.1.0) escaped. The genetic summary of the population is presented in table 6. It indicates that the population has retained a high level of genetic diversity; a consequence of the large number of wild origin specimens included in the current population.

Table 6: Genetic summary

	Current	Potential
Founders	12	25
Gene Diversity	0.9306	0.9857
Population Mean Kinship	0.0694	
Founder Genome Equivalents	7.2	35

Population Management Goals

The maintenance of sustainable captive populations is dependent on identifying the minimum size required to be maintained in captivity and the supplementation with wild origin founders (number and frequency) to maintain genetic viability. Simulation using PMx Software (Ballou *et. al.* 2011) provides the necessary insights needed for developing a long term species-specific management plan. Given below are the outcomes of the simulations carried out to assess the population size needed to be maintained in captivity and the supplementation with wild origin animals required to maintain a demographically stable and genetically viable captive population over the next 100 years.

The simulations run using the existing population without supplementation and maintaining it at its current size revealed that the population was not viable and would be unable to achieve the targets of maintain the desired population size as well as the desired genetic diversity. The population would be able to retain 90% genetic diversity till the sixth year and would be extinct by the 23rd year.

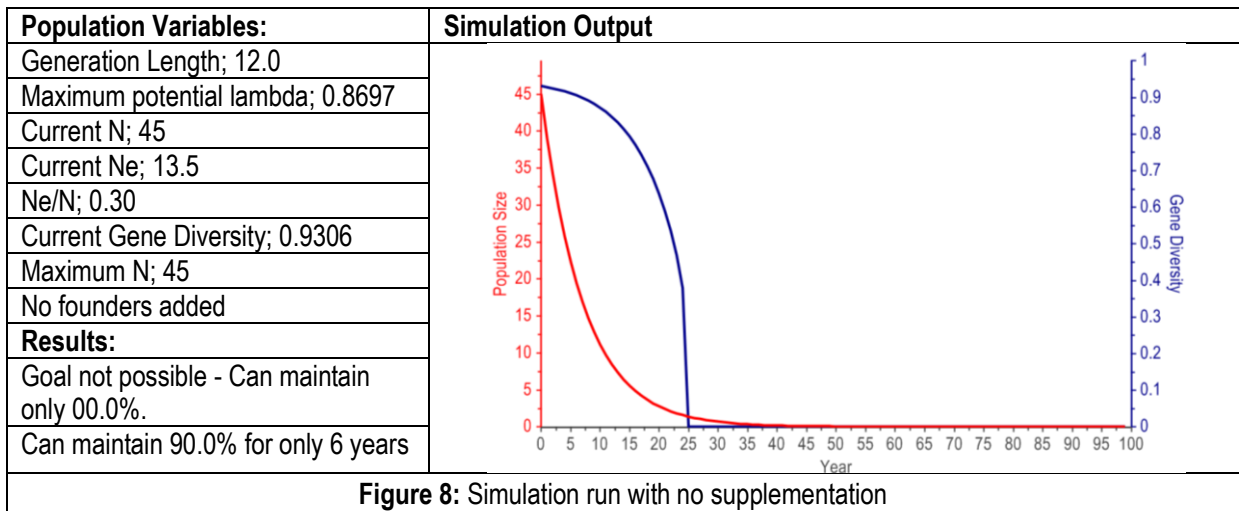


Figure 8: Simulation run with no supplementation

Several simulations were run to ascertain the size of the population to be maintained in captivity and the number of animals and frequency of supplementation required for maintaining a genetically viable and demographically stable population. The simulation runs with supplementation by one effective founder every second year over the next 100 years, increasing the population growth rate (λ) to 1.05 and increasing the maximum possible size to be maintained in captivity to 100 specimens can ensure the maintenance of a viable *ex-situ* population with minimal impact on the *in-situ* population.

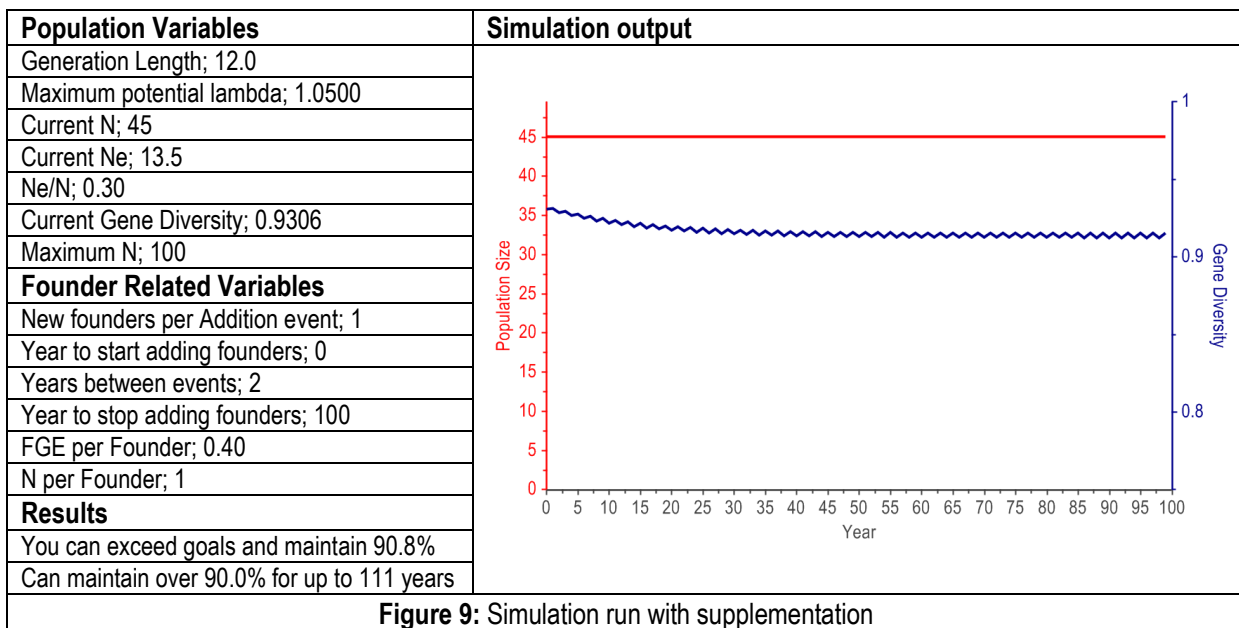


Figure 9: Simulation run with supplementation

Breeding Recommendations

The review of literature carried out suggests that hoolock gibbons exhibit a long-term monogamous breeding system. Keeping in view the mating system, demographic and genetic management would involve maintenance of animals in pairs. Breeding pairs that are already established should be continued while new pairs should be formed to ensure minimal relatedness. This can be ensured by pairings based on the Mate Suitability Index (MSI) (See box for details). The recommended breeding pairs thus obtained are summarized in table 7. While exercising mating choices the holding zoos should

take into consideration the mutual compatibility of the animals. A prior introduction and socialization period can help in overcoming compatibility issues.

Table 7: Pairing options for the captive Hoolock gibbon population

Possible Dam	Possible sires	MSI	Mate Suitability Index (MSI)
00005	00016, 00029	2	<p>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).</p> <p>The default value in the table is the <i>MSI</i> (Mate Suitability Index) value for each male –female pair. <i>MSI</i> is a composite score that integrates four genetic components into a single index:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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)</p> <p>Using Pairwise Info The default table of <i>MSI</i> 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.</p> <p>Source: Traylor-Holzer, K. (ed.). 2011.</p>
	00026	3	
00011	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	
00012	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	
00018	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	
00024	00016, 00029	2	
	00026	3	
00030	00016	3	
00038	00016, 00029	3	
00042	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	
00079	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	
00083	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	
00084	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	
00092	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	
00098	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	
00104	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	
00107	00032, 00034, 00064, 00081, 00082, 00085, 00088, 00089, 00090, 00091, 00093, 00095, 00096, 00099	1	

Conclusions

Hoolock gibbons are an endangered ape species inhabiting forested tracts in north-east India and neighbouring Bangladesh and Myanmar. The species in its native habitat is threatened by habitat degradation and poaching. The establishment of a genetically viable and demographically stable ex-situ population of the species is of great conservation significance. Towards this end a conservation breeding program for the species has been initiated by zoos in India. The current captive population

comprises of 50 (22.21.7) specimens housed at 10 institutions in India. The studbook includes a total of 103 (51.42.10) specimens with the first animals entering captivity in 1980.

The population is characterized by a poor birth rate with 93 (48.41.4) wild origin specimens and only 14 (6.2.6) captive born individuals resulting in a declining population ($\lambda = 0.870$).

The species is characterized by high age of sexual maturity (6 – 8 years), a long generation time (12 years) and an inter-birth interval of 2 years; factors that further contribute to the low population growth rate.

Presence of a large number of wild origin animals in the captive population has ensured that it retains more than the desired 90% of genetic diversity of the sampled population; however, the limited fecundity has resulted in a mean kinship of 0.0694 indicating that reproductive activity is limited to related individuals.

The low recruitment rate of the captive population is also suggestive of shortcomings in the housing and husbandry practices of the species.

A review of the existing husbandry practices for identifying shortcomings needs to be carried out on a priority basis. The shortcomings identified can be addressed by a review of practices at Itanagar and from literature available for the species.

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Annexure I

Historical population Hoolock gibbon (*Hoolock hoolock*)

Sl. No.	National Studbook No.	House Name Local ID Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
1.	00001	Unnamed	M	~ 1982	Unk	Unk	Dacca Delhi	~ 1982 06-Apr-90 20-Feb-91	Birth Transfer Death
2.	00002	Unnamed 210001	F	~ 1986	Unk	Unk	Dacca Delhi	~ 1986 06-Apr-90	Birth Transfer
3.	00003	Unnamed 600032 0006B776BE	M	~ 1987	Wild	Wild	India Assam	12-Feb-90 12-Feb-90 15-Sep-09	Capture Transfer Death
4.	00004	Laxmi Hog-2 0006B89D7F	F	~ 1985	Wild	Wild	India Sepahijala	10-Apr-96 11-Apr-96 02-Jan-10	Capture Transfer Death
5.	00005	Buangi 3 98102058074	F	~ 1999	Wild	Wild	India Aizawl	05-Mar-00 06-Mar-00	Capture Transfer
6.	00006	Hangi	?	????	Wild	Wild	India Aizawl	???? ???? 19-Jul-04	Capture Transfer Death
7.	00007	Te-A	M	????	Wild	Wild	India Aizawl	???? ???? 31-Dec-04	Capture Transfer Death
8.	00008	Vala	?	????	Wild	Wild	India Aizawl	???? ???? 28-Dec-06	Capture Transfer Death
9.	00009	Unknown	?	~ Mar 2001	Wild	Wild	India Roing	12-May-01 12-May-01 03-Feb-04	Capture Transfer Death
10.	00010	Saraswati	F	~ 1999	Wild	Wild	India Sepahijala	02-Jun-02 02-Jun-02 30-Apr-03	Capture Transfer Death
11.	00011	Zovi(new)/Mary 98102056874	F	~ 2003	Wild	Wild	India Aizawl	16-Jan-04 18-Jan-04	Capture Transfer
12.	00012	Chalbengi/Zovi (old) 98102057838	F	~ 2003	Wild	Wild	India Aizawl	05-Feb-04 07-Feb-04	Capture Transfer
13.	00013	Buka 8 98102055892	M	~ 2006	Wild	Wild	India Aizawl	26-Apr-07 28-Apr-07 07-Oct-12	Capture Transfer Death
14.	00014	Manika Hog-1 0006B7422C	F	????	Wild	Wild	India Sepahijala	13-May-05 13-May-05 15-Apr-09	Capture Transfer Death
15.	00015	Mini 600033 0006B729F1	F	~ 1997	Wild	Wild	India Assam	27-Jun-05 27-Jun-05 07-Mar-13	Capture Transfer Death
16.	00016	Bawiha 1 98102055874	M	~ 2005	Wild	Wild	India Aizawl	03-Feb-06 05-Feb-06	Capture Transfer
17.	00017	Unnamed	M	????	Wild	Wild	India Shillong Tura	???? ???? 08-Sep-05 28-Jun-06	Capture Transfer Transfer Death
18.	00018	Nutei 2 98102057879	F	~ 2005	Wild	Wild	India Aizawl Delhi	06-Feb-06 07-Feb-06 09-Sep-14	Capture Transfer Transfer
19.	19	Unnamed	F	????	Wild	Wild	India	31-Mar-06	Capture

Sl. No.	National Studbook No.	House Name Local ID Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
							Tura	31-Mar-06 24-Sep-06	Transfer Death
20.	20	Duma	M	????	Wild	Wild	India Aizawl	25-Sep-06 26-Sep-06	Capture Itf
21.	21	Bankawia	M	????	Wild	Wild	India Aizawl	12-Oct-06 13-Oct-06	Capture Itf
22.	22	Linggi H1	M	~ 1999	Wild	Wild	India Itanagar	12-Mar-07 12-Mar-07	Capture Transfer
23.	23	Dello H-2	F	~ 1997	Wild	Wild	India Itanagar	12-Mar-07 12-Mar-07 22-Oct-13	Capture Transfer Death
24.	24	Yasum H-4	F	~ 1997	Wild	Wild	India Itanagar	12-Mar-07 12-Mar-07	Capture Transfer
25.	25	Baby H-16 98102057VB15	M	~ 2005	00022	00023	India Itanagar	12-Mar-07 12-Mar-07	Capture Transfer
26.	26	Ladger H-5	M	~ 1997	Wild	Wild	India Itanagar	15-Mar-07 15-Mar-07	Capture Transfer
27.	27	Rukmini H-6	F	~ 1997	Wild	Wild	India Itanagar	15-Mar-07 15-Mar-07 28-Oct-10	Capture Transfer Death
28.	28	Nega H-3 98102055475	M	~ 2000	00026	00027	India Itanagar	15-Mar-07 15-Mar-07 23-Aug-09	Capture Transfer Death
29.	29	000Corneal Opacity H-9 981098102057899	M	~ 1997	Wild	Wild	India Itanagar	04-Dec-07 04-Dec-07	Capture Transfer
30.	30	Yapa H-10 98100800507	F	~ 2001	00029	Wild	India Itanagar	04-Dec-07 04-Dec-07	Capture Transfer
31.	31	Mithum H-11	M	????	Wild	Wild	India Itanagar	04-Dec-07 04-Dec-07 02-Jun-09	Capture Transfer Death
32.	32	Taping H-12 98102056942	M	~ 2005	Wild	Wild	India Itanagar	04-Dec-07 04-Dec-07	Capture Transfer
33.	33	Pintu H-17 98102055475	M	~ 2006	Wild	Wild	India Itanagar Miao	04-Dec-07 04-Dec-07 ????	Capture Transfer Itf
34.	34	Deomali H-13 210002 98102055330	M	~ 2005	Wild	Wild	India Itanagar Delhi	20-Jan-08 20-Jan-08 04-Jul-10	Capture Transfer Transfer
35.	35	Unnamed	M	????	Wild	Wild	India Tura	21-Jan-08 21-Jan-08 16-Feb-08	Capture Transfer Death
36.	36	Narayan Hog-3 0006B742FA	M	~ Feb 2005	Wild	Wild	India Sepahijala	22-Sep-08 22-Sep-08 28-Jun-13	Capture Transfer Death
37.	37	Cute H-15 98102056666	M	~ 2004	Wild	00038	India Itanagar	23-Feb-08 23-Feb-08	Capture Transfer
38.	38	Mishmi Baideo H-14 98102055876	F	~ 1999	Wild	Wild	India Itanagar	23-Feb-08 23-Feb-08	Capture Transfer
39.	39	Anga	F	05-Jul-08	00026	00027	Itanagar	05-Jul-08	Birth

Sl. No.	National Studbook No.	House Name Local ID Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
		H-18 Hog-5 981020858060					Sepahijala	29-Aug-12	Transfer
40.	40	Jimmy H-19 98102057183	M	22-Sep-08	00028	00024	Itanagar	22-Sep-08	Birth
41.	41	Seni	?	????	Wild	Wild	India Aizawl	???? ????	Capture lft
42.	42	Munni 127 600035 0006B756AE	F	~ Jul 2006	Wild	Wild	India Shillong Assam	25-Sep-06 25-Sep-06 18-Dec-08	Capture Transfer Transfer
43.	43	Unnamed	F	~ Nov 2001	Wild	Wild	India Miao	~ Feb 2002 ~ Feb 2002	Capture lft
44.	44	Unnamed 600001	M	~ 1972	Wild	Wild	India Assam	12-Jan-80 12-Jan-80 30-Jul-83	Capture Transfer Death
45.	45	Unnamed 600002	F	~ 1978	Wild	Wild	India Assam	25-Mar-80 25-Mar-80 19-Aug-83	Capture Transfer Death
46.	46	Unnamed 600003	M	~ 1978	Wild	Wild	India Assam	21-Dec-82 21-Dec-82 19-Jul-84	Capture Transfer Death
47.	47	Unnamed 600005	M	~ 1979	Wild	Wild	India Assam	04-Feb-83 04-Feb-83 18-Sep-85	Capture Transfer Death
48.	48	Unnamed 600006	M	~ 1979	Wild	Wild	India Assam	04-Feb-83 04-Feb-83 19-Sep-85	Capture Transfer Death
49.	49	Unnamed 600004	F	~ 1979	Wild	Wild	India Assam	11-Mar-83 11-Mar-83 12-Apr-83	Capture Transfer Death
50.	50	Unnamed 600007	M	~ 1981	Wild	Wild	India Assam	06-Apr-83 06-Apr-83 18-Sep-85	Capture Transfer Death
51.	51	Unnamed 600008	F	~ 1981	Wild	Wild	India Assam	06-Apr-83 06-Apr-83 18-Jun-86	Capture Transfer Death
52.	52	Unnamed 600009	F	~ 1978	Wild	Wild	India Assam	24-Apr-83 24-Apr-83 04-Nov-83	Capture Transfer Death
53.	53	Unnamed 600010	M	~ 1981	Wild	Wild	India Assam	26-Apr-84 26-Apr-84 22-Jun-86	Capture Transfer Death
54.	54	Unnamed 600011	F	~ 1981	Wild	Wild	India Assam	06-May-85 06-May-85 22-Jun-86	Capture Transfer Death
55.	55	Unnamed 600012	F	~ 1984	Wild	Wild	India Assam	05-Mar-86 05-Mar-86 20-Jun-86	Capture Transfer Death
56.	56	Unnamed 600013	F	~ 1984	Wild	Wild	India Assam	05-Mar-86 05-Mar-86 08-Jul-86	Capture Transfer Death
57.	57	Unnamed 600014	M	~ 1978	Wild	Wild	India Assam	07-Apr-86 07-Apr-86 28-Aug-86	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Local ID Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
58.	58	Unnamed 600015	M	~ 1978	Wild	Wild	India Assam	07-Apr-86 07-Apr-86 16-Jul-86	Capture Transfer Death
59.	59	Unnamed 600016	M	~ 1980	Wild	Wild	India Assam	10-Apr-86 10-Apr-86 07-Oct-87	Capture Transfer Death
60.	60	Unnamed 600017	F	~ 1983	Wild	Wild	India Assam	19-Apr-86 19-Apr-86 15-Sep-88	Capture Transfer Death
61.	61	Unnamed 600018	M	~ 1984	Wild	Wild	India Assam	08-Jun-86 08-Jun-86 17-Jul-89	Capture Transfer Death
62.	62	Unnamed 600019	M	~ 1982	Wild	Wild	India Assam	14-Feb-87 14-Feb-87 31-Jul-89	Capture Transfer Death
63.	63	Unnamed 600020	M	~ 1985	Wild	Wild	India Assam	22-Jul-87 22-Jul-87 01-Sep-89	Capture Transfer Death
64.	64	Kalu 70	M	????	Wild	Wild	India Lucknow	27-Nov-87 27-Nov-87	Capture Transfer
65.	65	Unnamed 600021	M	10-Dec-87	00061	00060	Assam	10-Dec-87 31-Jul-88	Birth Death
66.	66	Unnamed 600022	M	~ 1987	Wild	Wild	India Assam	25-Apr-88 25-Apr-88 19-Sep-89	Capture Transfer Death
67.	67	Unnamed 600023	F	~ 1986	Wild	Wild	India Assam	25-Apr-88 25-Apr-88 17-Aug-88	Capture Transfer Death
68.	68	Unnamed 600024	F	~ 1988	Wild	Wild	India Assam	14-Mar-89 14-Mar-89 02-Apr-89	Capture Transfer Death
69.	69	Unnamed 600025	F	~ 1988	Wild	Wild	India Assam	14-Mar-89 14-Mar-89 12-Sep-89	Capture Transfer Death
70.	70	Unnamed 600026	F	~ 1987	Wild	Wild	India Assam	08-Apr-89 08-Apr-89 09-Jun-90	Capture Transfer Death
71.	71	Unnamed 600027	F	~ 1987	Wild	Wild	India Assam	21-Apr-89 21-Apr-89 28-Feb-91	Capture Transfer Death
72.	72	Unnamed 600028	M	~ 1988	Wild	Wild	India Assam	11-May-89 11-May-89 29-Oct-90	Capture Transfer Death
73.	73	Unnamed 600029	F	~ 1987	Wild	Wild	India Assam	11-May-89 11-May-89 02-Dec-90	Capture Transfer Death
74.	74	Unnamed 600030	M	~ 1988	Wild	Wild	India Assam	14-Jun-89 14-Jun-89 25-May-90	Capture Transfer Death
75.	75	Unnamed 600031	M	~ 1987	Wild	Wild	India Assam	12-Feb-90 12-Feb-90 15-Sep-09	Capture Transfer Death
76.	76	Unnamed	M	????	Wild	Wild	India Manipur	~ 1997 ~ 1997 07-Jun-11	Capture Transfer Death
77.	77	Unnamed	F	~ 1997	Wild	Wild	India	~ 1997	Capture

Sl. No.	National Studbook No.	House Name Local ID Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
							Manipur	~ 1997 04-Oct-11	Transfer Death
78.	78	Rani 71	F	????	Wild	Wild	India Lucknow	26-Mar-98 26-Mar-98 04-Oct-12	Capture Transfer Death
79.	79	Unnamed	F	????	Wild	Wild	India Miao	20-Feb-05 20-Feb-05	Capture Transfer
80.	80	Yapi	F	????	Wild	Wild	India Itanagar India	15-Mar-07 15-Mar-07 ????	Capture Transfer Escape
81.	81	Mr. Batt H-7 98102055475	M	~ 1997	Wild	Wild	India Itanagar	15-Mar-07 15-Mar-07	Capture Transfer
82.	82	Babu 135 600034 0006B77654	M	~ 1999	Wild	Wild	India Shillong Assam	13-Aug-07 13-Aug-07 18-Dec-08	Capture Transfer Transfer
83.	83	Bawih Bawihi Hog-6 98102057696	F	~ 2006	Wild	Wild	India Aizawl Sepahijala	08-Nov-07 09-Nov-07 20-Mar-13	Capture Transfer Transfer
84.	84	Buli 5 98102058298	F	~ 2006	Wild	Wild	India Aizawl	09-Nov-07 09-Nov-07	Capture Transfer
85.	85	Harubabu 136 600036 0006B771C6	M	~ Apr 2008	Wild	Wild	India Shillong Assam	03-Oct-08 03-Oct-08 18-Dec-08	Capture Transfer Transfer
86.	86	Toram H-20	?	05-Oct-08	00022	00023	Itanagar	05-Oct-08	Birth
87.	87	Daoli H-21	M	29-Jun-09	00029	00038	Itanagar	29-Jun-09 01-Sep-10	Birth Death
88.	88	Unnamed	M	~ Dec 2008	Wild	Wild	India Miao	05-Sep-09 05-Sep-09	Capture Transfer
89.	89	Innow H-22	M	????	Wild	Wild	India Itanagar	???? ????	Capture Transfer
90.	90	Unnamed	M	~ Jan 2010	Wild	Wild	India Miao	23-Mar-10 23-Mar-10	Capture Transfer
91.	91	Boboa Op-1	M	????	Wild	Wild	India Aizawl	15-Apr-10 15-Apr-10	Capture Transfer
92.	92	Unnamed 600037	F	~ 2009	Wild	Wild	India Assam	04-May-10 04-May-10	Capture Transfer
93.	93	Unnamed	M	~ Jan 2010	Wild	Wild	India Manipur	09-Jun-10 09-Jun-10	Capture Transfer
94.	94	Bogi/Ati-Opan H-23	M	09-Aug-10	00026	00027	Itanagar	09-Aug-10 21-Jan-12	Birth Death
95.	95	Rocky	M	~ 2007	Wild	Wild	India Dimapur	14-Sep-10 14-Sep-10	Capture Transfer
96.	96	Unnamed	M	~ May 2009	Wild	Wild	India Miao	07-Nov-10 07-Nov-10	Capture Transfer
97.	97	Jisu H-24	?	25-Dec-10	00022	00023	Itanagar	25-Dec-10	Birth
98.	98	Chhuri Op-2	F	????	Wild	Wild	India Aizawl	10-Mar-11 10-Mar-11	Capture Transfer
99.	99	Krishna Hog-4	M	~ 2009	Wild	Wild	India Sepahijala	08-May-11 08-May-11	Capture Transfer
100.	100	Zara	M	05-Jun-11	00016	00005	Aizawl	05-Jun-11	Birth

Sl. No.	National Studbook No.	House Name Local ID Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
		Zb-1 98102057879							
101.	101	Munumunu H-25 98102056396	F	????	Wild	Wild	India Miao Itanagar	???? ???? 20-Jun-11 05-Sep-14	Capture Transfer Transfer Death
102.	102	Unnamed H-26	?	18-Sep-11	00029	00038	Itanagar	18-Sep-11	Birth
103.	103	Sonu H-27	?	30-Jun-12	00037	00024	Itanagar	30-Jun-12	Birth
104.	104	Unnamed 600038	F	~ 2004	Wild	Wild	India Assam	10-Mar-13 10-Mar-13	Capture Transfer
105.	105	Unnamed H-28	?	26-Mar-13	00026	00101	Itanagar	26-Mar-13	Birth
106.	106	Unnamed Zb-2	?	16-Sep-13	00016	00005	Aizawl	16-Sep-13	Birth
107.	107	Two-Fi	F	~ 2011	Wild	Wild	India Dimapur	25-Nov-13 25-Nov-13	Capture Transfer
TOTALS: 54.43.10 (107)									

Annexure II

Living population Hoolock gibbon (*Hoolock hoolock*)

Sl. No.	National Studbook No.	House Name Transponder No. Local ID.	Sex	Birth Date	Sire	Dam	Location	Date	Event
Aizawl Zoo, Aizawl, Mizoram									
1.	00005	Buangi 3 98102058074	F	~ 1999	Wild	Wild	India Aizawl	05-Mar-00 06-Mar-00	Capture Transfer
2.	00011	Zovi(New)/Mary 98102056874	F	~ 2003	Wild	Wild	India Aizawl	16-Jan-04 18-Jan-04	Capture Transfer
3.	00012	Chalbengi/Zovi (old) 98102057838	F	~ 2003	Wild	Wild	India Aizawl	05-Feb-04 07-Feb-04	Capture Transfer
4.	00016	Bawiha 1 98102055874	M	~ 2005	Wild	Wild	India Aizawl	03-Feb-06 05-Feb-06	Capture Transfer
5.	00084	Buli 5 98102058298	F	~ 2006	Wild	Wild	India Aizawl	09-Nov-07 09-Nov-07	Capture Transfer
6.	00091	Boboa OP-1	M	????	Wild	Wild	India Aizawl	15-Apr-10 15-Apr-10	Capture Transfer
7.	00098	Chhuri OP-2	F	????	Wild	Wild	India Aizawl	10-Mar-11 10-Mar-11	Capture Transfer
8.	00100	Zara ZB-1 98102057879	M	05-Jun-11	00016	00005	Aizawl	05-Jun-11	Birth
9.	00106	Unnamed ZB-2	?	16-Sep-13	00016	00005	Aizawl	16-Sep-13	Birth
Totals: 3.5.1-9									
Assam State Zoo cum Botanical Garden, Guwahati, Assam									
1.	00042	Munni 127 600035 0006B756AE	F	~ Jul 2006	Wild	Wild	India Shillong Assam	25-Sep-06 25-Sep-06 18-Dec-08	Capture Transfer Transfer
2.	00082	Babu 135 600034 0006B77654	M	~ 1999	Wild	Wild	India Shillong Assam	13-Aug-07 13-Aug-07 18-Dec-08	Capture Transfer Transfer
3.	00085	Harubabu 136 600036 0006B771C6	M	~ Apr 2008	Wild	Wild	India Shillong Assam	03-Oct-08 03-Oct-08 18-Dec-08	Capture Transfer Transfer
4.	00092	Unnamed 600037	F	~ 2009	Wild	Wild	India Assam	04-May-10 04-May-10	Capture Transfer

Sl. No.	National Studbook No.	House Name Transponder No. Local ID.	Sex	Birth Date	Sire	Dam	Location	Date	Event
5.	00104	Unnamed 600038	F	~ 2004	Wild	Wild	India Assam	10-Mar-13 10-Mar-13	Capture Transfer
Totals: 2.3.0-5									
Biological Park, Itanagar, Arunachal Pradesh									
1.	00022	Linggi H1	M	~ 1999	Wild	Wild	India Itanagar	12-Mar-07 12-Mar-07	Capture Transfer
2.	00024	Yasum H-4	F	~ 1997	Wild	Wild	India Itanagar	12-Mar-07 12-Mar-07	Capture Transfer
3.	00025	Baby H-16 98102057VB156	M	~ 2005	00022	00023	India Itanagar	12-Mar-07 12-Mar-07	Capture Transfer
4.	00026	Ladger H-5	M	~ 1997	Wild	Wild	India Itanagar	15-Mar-07 15-Mar-07	Capture Transfer
5.	00029	Corneal Opacity H-9 981098102057899	M	~ 1997	Wild	Wild	India Itanagar	04-Dec-07 04-Dec-07	Capture Transfer
6.	00030	Yapa H-10 98100800507	F	~ 2001	00029	WILD	India Itanagar	04-Dec-07 04-Dec-07	Capture Transfer
7.	00032	Taping H-12 98102056942	M	~ 2005	Wild	Wild	India Itanagar	04-Dec-07 04-Dec-07	Capture Transfer
8.	00037	Cute H-15 98102056666	M	~ 2004	Wild	00038	India Itanagar	23-Feb-08 23-Feb-08	Capture Transfer
9.	00038	Mishmi Baideo H-14 98102055876	F	~ 1999	Wild	Wild	India Itanagar	23-Feb-08 23-Feb-08	Capture Transfer
10.	00040	Jimmy H-19 98102057183	M	22-Sep-08	00028	00024	Itanagar	22-Sep-08	Birth
11.	00081	Mr. Batt H-7 98102055475	M	~ 1997	Wild	Wild	India Itanagar	15-Mar-07 15-Mar-07	Capture Transfer
12.	00086	Toram H-20	?	05-Oct-08	00022	00023	Itanagar	05-Oct-08	Birth
13.	00089	Innow H-22	M	????	Wild	Wild	India Itanagar	???? ????	Capture Transfer
14.	00097	Jisu H-24	?	25-Dec-10	00022	00023	Itanagar	25-Dec-10	Birth
15.	00102	Unnamed H-26	?	18-Sep-11	00029	00038	Itanagar	18-Sep-11	Birth

Sl. No.	National Studbook No.	House Name Transponder No. Local ID.	Sex	Birth Date	Sire	Dam	Location	Date	Event
16.	00103	Sonu H-27	?	30-Jun-12	00037	00024	Itanagar	30-Jun-12	Birth
17.	00105	Unnamed	?	26-Mar-13	00026	00101	Itanagar	26-Mar-13	Birth
Totals: 9.3.5-17									
Lucknow Zoological Park, Lucknow, Uttar Pradesh									
1.	00064	Kalu 70	M	????	Wild	Wild	India Lucknow	27-Nov-87 27-Nov-87	Capture Transfer
Totals: 1.0.0-1									
Manipur Zoological Garden, Imphal, Manipur									
1.	00093	Unnamed	M	~ Jan 2010	Wild	Wild	India Manipur	09-Jun-10 09-Jun-10	Capture Transfer
Totals: 1.0.0-1									
Miao Mini Zoo, Miao, Arunachal Pradesh									
1.	00079	Unnamed	F	????	Wild	Wild	India Miao	20-Feb-05 20-Feb-05	Capture Transfer
2.	00088	Unnamed	M	~ Dec 2008	Wild	Wild	India Miao	05-Sep-09 05-Sep-09	Capture Transfer
3.	00090	Unnamed	M	~ Jan 2010	Wild	Wild	India Miao	23-Mar-10 23-Mar-10	Capture Transfer
4.	00096	Unnamed	M	~ May 2009	Wild	Wild	India Miao	07-Nov-10 07-Nov-10	Capture Transfer
Totals: 3.1.0-4									
Nagaland Zoological Park, Rangapahar, Dimapur, Nagaland									
1.	00095	Rocky	M	~ 2007	Wild	Wild	India Dimapur	14-Sep-10 14-Sep-10	Capture Transfer
2.	00107	Two-Fi	F	~ 2011	Wild	Wild	India Dimapur	25-Nov-13 25-Nov-13	Capture Transfer
Totals: 1.1.0-2									
National Zoological Park, New Delhi									
1.	00002	Unnamed 210001	F	~ 1986	Unk	Unk	Dacca Delhi	~ 1986 06-Apr-90	Birth Transfer
2.	00018	Nutei 2 98102057879	F	~ 2005	Wild	Wild	India Aizawl Delhi	06-Feb-06 07-Feb-06 09-Sep-14	Capture Transfer Transfer
3.	00034	Deomali H-13 210002 98102055330	M	~ 2005	Wild	Wild	India Itanagar Delhi	20-Jan-08 20-Jan-08 04-Jul-10	Capture Transfer Transfer
Totals: 1.2.0-3									
Sepahijala Zoological Park, Agartala, Tripura									
1.	00039	Anga H-18 981020858060	F	05-Jul-08	00026	00027	Itanagar Sepahijala	05-Jul-08 29-Aug-12	Birth Transfer

Sl. No.	National Studbook No.	House Name Transponder No. Local ID.	Sex	Birth Date	Sire	Dam	Location	Date	Event
2.	00083	Bawih Bawihi HOG-6 98102057696	F	~ 2006	Wild	Wild	India Aizawl Sepahijala	08-Nov-07 09-Nov-07 20-Mar-13	Capture Transfer Transfer
3.	00099	Krishna HOG-4	M	~ 2009	Wild	Wild	India Sepahijala	08-May-11 08-May-11	Capture Transfer
Totals: 1.2.0-3									
TOTALS: 22.17.6 (45)									
9 Institutions									

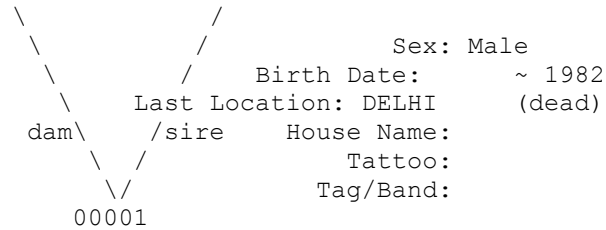
Pedigree Chart Report Hoolock Gibbon

=====
Taxon Name: HOOLOCK HOOLOCK

Studbook Number: 00001
=====

UNK

UNK

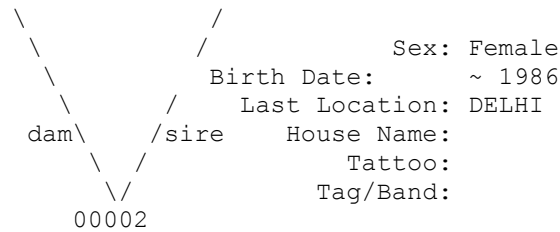


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Taxon Name: HOOLOCK HOOLOCK

Studbook Number: 00002
=====

UNK

UNK

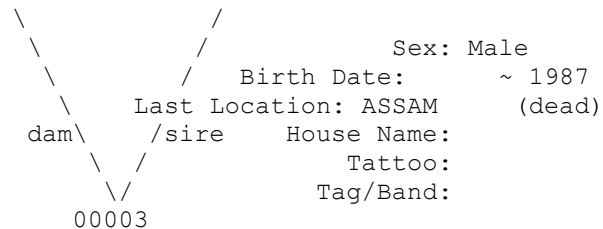


=====
Taxon Name: HOOLOCK HOOLOCK

Studbook Number: 00003
=====

WILD

WILD

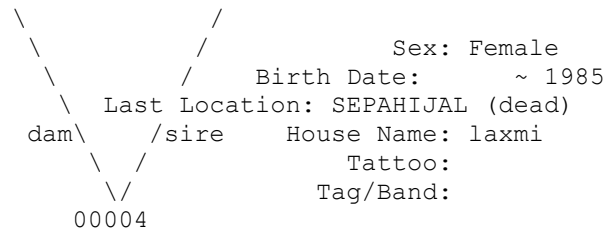


=====
Taxon Name: HOOLOCK HOOLOCK

Studbook Number: 00004
=====

WILD

WILD



=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00010
=====

WILD WILD
Sex: Female
Birth Date: ~ 1999
Last Location: SEPAHIJAL (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00010

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00011
=====

WILD WILD
Sex: Female
Birth Date: ~ 2003
Last Location: AIZAWL
dam \ / sire House Name: Zovi (new)/Mary
Tattoo:
Tag/Band:
00011

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00012
=====

WILD WILD
Sex: Female
Birth Date: ~ 2003
Last Location: AIZAWL
dam \ / sire House Name: ChalbengiZoviol
Tattoo:
Tag/Band:
00012

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00013
=====

WILD WILD
Sex: Male
Birth Date: ~ 2006
Last Location: AIZAWL (dead)
dam \ / sire House Name: BUKA
Tattoo:
Tag/Band:
00013

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00014
=====

WILD WILD
Sex: Female
Birth Date: ????
Last Location: SEPAHIJAL (dead)
dam \ / sire House Name: manika
Tattoo:
Tag/Band:
00014

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00015
=====

WILD WILD
Sex: Female
Birth Date: ~ 1997
Last Location: ASSAM (dead)
House Name: MINI
Tattoo:
Tag/Band:
dam \ / sire
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
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
00017

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00018
=====

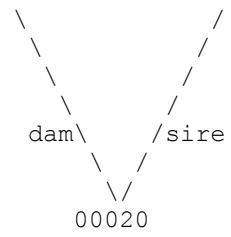
WILD WILD
Sex: Female
Birth Date: ~ 2005
Last Location: DELHI
House Name: Nutei
Tattoo:
Tag/Band:
dam \ / sire
00018

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00019
=====

WILD WILD
Sex: Female
Birth Date: ???
Last Location: TURA (dead)
House Name:
Tattoo:
Tag/Band:
dam \ / sire
00019

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00020
=====

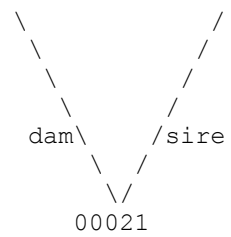
WILD WILD



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

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00021
=====

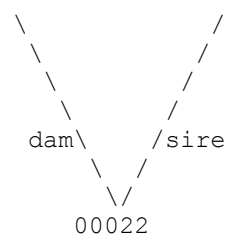
WILD WILD



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
=====

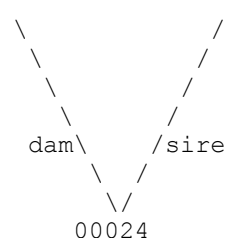
WILD WILD



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 dam\ /sire WILD dam\ /sire WILD dam\ /sire WILD
00023 + DELLO 00022 + LINGGI
Sex: Male
Birth Date: ~ 2005
Last Location: ITANAGAR
House Name: BABY
Tattoo:
Tag/Band:
+ Wild-caught...
00025

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00026
=====
WILD dam\ /sire WILD
Sex: Male
Birth Date: ~ 1997
Last Location: ITANAGAR
House Name: LADGER
Tattoo:
Tag/Band:
00026

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00027
=====
WILD dam\ /sire WILD
Sex: Female
Birth Date: ~ 1997
Last Location: ITANAGAR (dead)
House Name: Rukmini
Tattoo:
Tag/Band:
00027

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00028
=====
WILD dam\ /sire WILD dam\ /sire WILD dam\ /sire WILD
00027 + Rukmini 00026 + LADGER
Sex: Male
Birth Date: ~ 2000
Last Location: ITANAGAR (dead)
House Name: nega
Tattoo:
Tag/Band:
+ Wild-caught...
00028

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00029
=====
WILD                                             WILD
          \   /
           \ /
            V
          dam\ sire
             \ /
              V
             00029
          Sex: Male
          Birth Date: ~ 1997
          Last Location: ITANAGAR
          House Name: Corneal opacity
          Tattoo:
          Tag/Band:

```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00030
=====
WILD                                             WILD
          \   /
           \ /
            V
          dam\ sire
             \ /
              V
             00029 +
             Corneal
          Sex: Female
          Birth Date: ~ 2001
          Last Location: ITANAGAR
          House Name: YAPA
          Tattoo:
          Tag/Band:
+ Wild-caught...

```

```

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

```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00032
=====
WILD                                             WILD
          \   /
           \ /
            V
          dam\ sire
             \ /
              V
             00032
          Sex: Male
          Birth Date: ~ 2005
          Last Location: ITANAGAR
          House Name: TAPING
          Tattoo:
          Tag/Band:

```

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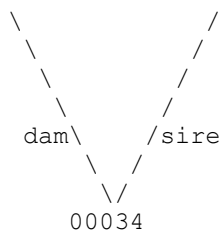
=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00033
=====
WILD                                             WILD
          \   /
           \ /
            V
          dam\ sire
             \ /
              V
             00033
          Sex: Male
          Birth Date: ~ 2006
          Last Location: MIAO
          House Name: Pintu
          Tattoo:
          Tag/Band:

```


=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00034
=====

WILD

WILD



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

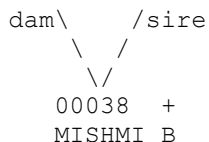


Sex: Male
Birth Date: ~ Feb 2005
Last Location: SEPAHIJAL (dead)
House Name: narayan
Tattoo:
Tag/Band:

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00037
=====

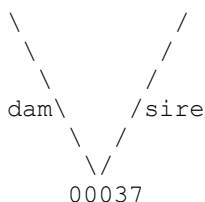
WILD

WILD



00038 +
MISHMI B

WILD



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

+ Wild-caught...

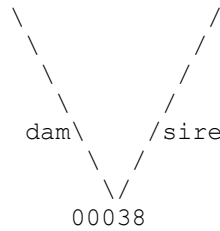
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Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00038

=====

WILD

WILD



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

=====

Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00039

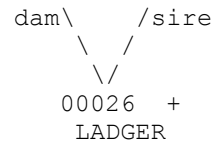
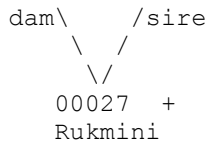
=====

WILD

WILD

WILD

WILD



Sex: Female
 Birth Date: 5 Jul 2008
 Last Location: SEPAHIJAL
 House Name: ANGA
 Tattoo:
 Tag/Band:

+ Wild-caught...

=====

Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00040

=====

WILD

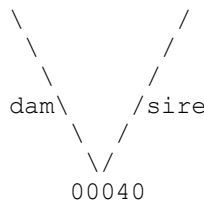
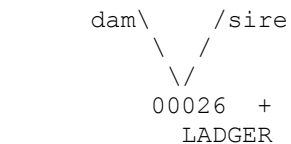
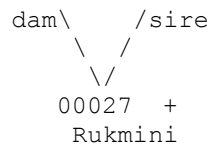
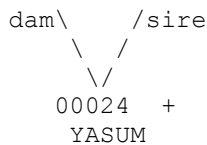
WILD

WILD

WILD

WILD

WILD



Sex: Male
 Birth Date: 22 Sep 2008
 Last Location: ITANAGAR
 House Name: JIMMY
 Tattoo:
 Tag/Band:

+ Wild-caught...

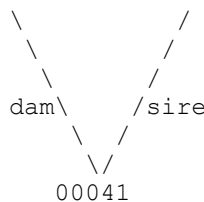
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Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00041

=====

WILD

WILD



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

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00042
=====

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

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00043
=====

WILD WILD
Sex: Female
Birth Date: ~ Nov 2001
Last Location: MIAO
House Name:
Tattoo:
Tag/Band:
dam \ / sire
00043

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00044
=====

WILD WILD
Sex: Male
Birth Date: ~ 1972
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:
dam \ / sire
00044

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00045
=====

WILD WILD
Sex: Female
Birth Date: ~ 1978
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:
dam \ / sire
00045

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00046
=====

WILD WILD
Sex: Male
Birth Date: ~ 1978
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:
dam \ / sire
00046

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00047
=====

WILD WILD
Sex: Male
Birth Date: ~ 1979
Last Location: ASSAM (dead)
dam \ / sire
House Name:
Tattoo:
Tag/Band:
00047

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00048
=====

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

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00049
=====

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

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00050
=====

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

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00051
=====

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

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00052
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1978
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00052

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00053
=====

WILD

WILD

Sex: Male
Birth Date: ~ 1981
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00053

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00054
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1981
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00054

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00055
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1984
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00055

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00056
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1984
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00056

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00057
=====

WILD

WILD

Sex: Male
Birth Date: ~ 1978
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00057

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00058
=====

WILD

WILD

Sex: Male
Birth Date: ~ 1978
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00058

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00059
=====

WILD

WILD

Sex: Male
Birth Date: ~ 1980
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00059

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00060
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1983
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00060

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00061
=====

WILD

WILD

Sex: Male
Birth Date: ~ 1984
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00061

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00062
=====
WILD                                              WILD
      \      /
      \      /
      dam\  /sire
           \ /
            V
          00062
Sex: Male
Birth Date: ~ 1982
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

```

```

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

```

```

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

```

```

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

```

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00066
=====

WILD

WILD

Sex: Male
Birth Date: ~ 1987
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00066

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00067
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1986
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00067

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00068
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1988
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00068

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00069
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1988
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00069

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00070
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1987
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00070

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00071
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1987
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00071

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00072
=====

WILD

WILD

Sex: Male
Birth Date: ~ 1988
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00072

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00073
=====

WILD

WILD

Sex: Female
Birth Date: ~ 1987
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00073

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00074
=====

WILD

WILD

Sex: Male
Birth Date: ~ 1988
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00074

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00075
=====

WILD

WILD

Sex: Male
Birth Date: ~ 1987
Last Location: ASSAM (dead)
dam \ / sire House Name:
Tattoo:
Tag/Band:
00075


```

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

```

```

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

```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00083
=====
WILD                                             WILD
      \                                         /
      dam\                                     /sire
           \                               /
            \                           /
             \                         /
              \                       /
               \                     /
                \                   /
                 \                 /
                  \               /
                   \             /
                    \           /
                     \         /
                      \       /
                       \     /
                        \   /
                         \ /
                          V
                        00083
Sex: Female
Birth Date: ~ 2006
Last Location: SEPAHIJAL
House Name: Bawih Bawihi
Tattoo:
Tag/Band:

```

```

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

```

```

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

```

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00086
=====

WILD dam\ /sire WILD dam\ /sire WILD dam\ /sire WILD
00023 + 00022 +
DELLO LINGGI
Sex: Unknown
Birth Date: 5 Oct 2008
Last Location: ITANAGAR
House Name: TORAM
Tattoo:
Tag/Band:
+ Wild-caught... 00086

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00087
=====

WILD dam\ /sire WILD dam\ /sire WILD dam\ /sire WILD
00038 + 00029 +
MISHMI B Corneal
Sex: Male
Birth Date: 29 Jun 2009
Last Location: ITANAGAR (dead)
House Name: DAOLI
Tattoo:
Tag/Band:
+ Wild-caught... 00087

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00088
=====

WILD WILD
Sex: Male
Birth Date: ~ Dec 2008
Last Location: MIAO
House Name:
Tattoo:
Tag/Band:
00088

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00089
=====

WILD WILD
Sex: Male
Birth Date: ???
Last Location: ITANAGAR
House Name: innow
Tattoo:
Tag/Band:
00089

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00090
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date: ~ Jan 2010
                                                Last Location: MIAO
dam \      /sire                               House Name:
      \    /                                   Tattoo:
       \  /                                    Tag/Band:
        \ /
         V
        00090

```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00091
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date:      ????
                                                Last Location: AIZAWL
dam \      /sire                               House Name: Boboa
      \    /                                   Tattoo:
       \  /                                    Tag/Band:
        \ /
         V
        00091

```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00092
=====
WILD                                              WILD
                                                Sex: Female
                                                Birth Date:      ~ 2009
                                                Last Location: ASSAM
dam \      /sire                               House Name:
      \    /                                   Tattoo:
       \  /                                    Tag/Band:
        \ /
         V
        00092

```

```

=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00093
=====
WILD                                              WILD
                                                Sex: Male
                                                Birth Date: ~ Jan 2010
                                                Last Location: MANIPUR
dam \      /sire                               House Name:
      \    /                                   Tattoo:
       \  /                                    Tag/Band:
        \ /
         V
        00093

```

```

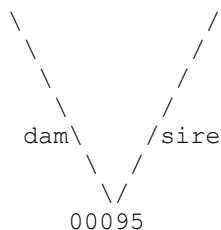
=====
Taxon Name: HOOLOCK HOOLOCK                      Studbook Number: 00094
=====
WILD      dam \      /sire      WILD      WILD      dam \      /sire      WILD
          \    /                \    /                \    /                \    /
           \  /                  \  /                  \  /                \  /
            \ /                    \ /                  \ /                \ /
             V                      V                    V                  V
            00027 +                00026 +                LADGER
            Rukmini                +
                                     Sex: Male
                                     Birth Date: 9 Aug 2010
                                     Last Location: ITANAGAR (dead)
dam \      /sire House Name: BOGI/ATI-OPAN
      \    /
       \  /
        \ /
         V
        00094
+ Wild-caught...

```

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00095
=====

WILD

WILD

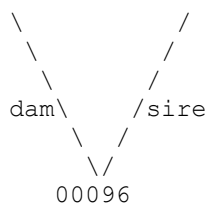


Sex: Male
Birth Date: ~ 2007
Last Location: DIMAPUR
House Name: Rocky
Tattoo:
Tag/Band:

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00096
=====

WILD

WILD



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

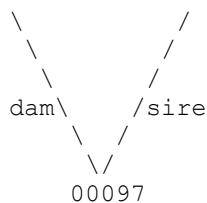
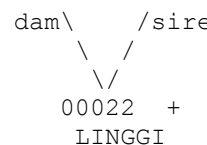
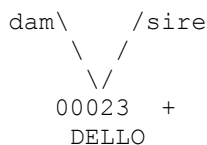
=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00097
=====

WILD

WILD

WILD

WILD



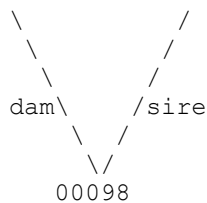
Sex: Unknown
Birth Date: 25 Dec 2010
Last Location: ITANAGAR
House Name: JISU
Tattoo:
Tag/Band:

+ Wild-caught...

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00098
=====

WILD

WILD

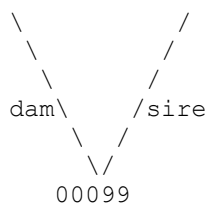


Sex: Female
Birth Date: ???
Last Location: AIZAWL
House Name: Chhuri
Tattoo:
Tag/Band:

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00099
=====

WILD

WILD



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

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

WILD dam\ /sire WILD WILD dam\ /sire WILD
00005 + BUANGI
00016 + BAWIHA
Sex: Male
Birth Date: 5 Jun 2011
Last Location: AIZAWL
House Name: Zara
Tattoo:
Tag/Band:
+ Wild-caught... 00100

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00101
=====

WILD WILD
Last Location: ITANAGAR (dead)
Sex: Female
Birth Date: ???
House Name: MUNUMUNU
Tattoo:
Tag/Band:
00101

=====
Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00102
=====

WILD dam\ /sire WILD WILD dam\ /sire WILD
00038 + MISHMI B
00029 + Corneal
Sex: Unknown
Birth Date: 18 Sep 2011
Last Location: ITANAGAR
House Name:
Tattoo:
Tag/Band:
+ Wild-caught... 00102

=====

Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00103

=====

WILD dam\ WILD WILD dam\ WILD

dam\ /sire /sire

00024 + 00038 + MISHMI B

YASUM CUTE

Sex: Unknown

Birth Date: 30 Jun 2012

Last Location: ITANAGAR

House Name: SONU

Tattoo:

Tag/Band:

+ Wild-caught... dam\ /sire

00103

=====

Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00104

=====

WILD dam\ WILD WILD dam\ WILD

dam\ /sire /sire

00104

Sex: Female

Birth Date: ~ 2004

Last Location: ASSAM

House Name:

Tattoo:

Tag/Band:

=====

Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00105

=====

WILD dam\ WILD WILD dam\ WILD

dam\ /sire /sire

00101 + 00026 +

MUNUMUNU LADGER

Sex: Unknown

Birth Date: 26 Mar 2013

Last Location: ITANAGAR

House Name:

Tattoo:

Tag/Band:

+ Wild-caught... dam\ /sire

00105

=====

Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00106

=====

WILD dam\ /sire WILD dam\ /sire WILD dam\ /sire WILD

00005 + BUANGI

00016 + BAWIHA

Sex: Unknown

Birth Date: 16 Sep 2013

Last Location: AIZAWL

House Name:

Tattoo:

Tag/Band:

+ Wild-caught... 00106

=====

Taxon Name: HOOLOCK HOOLOCK Studbook Number: 00107

=====

WILD dam\ /sire WILD dam\ /sire WILD

Sex: Female

Birth Date: ~ 2011

Last Location: DIMAPUR

House Name: Two-fi

Tattoo:

Tag/Band:

00107