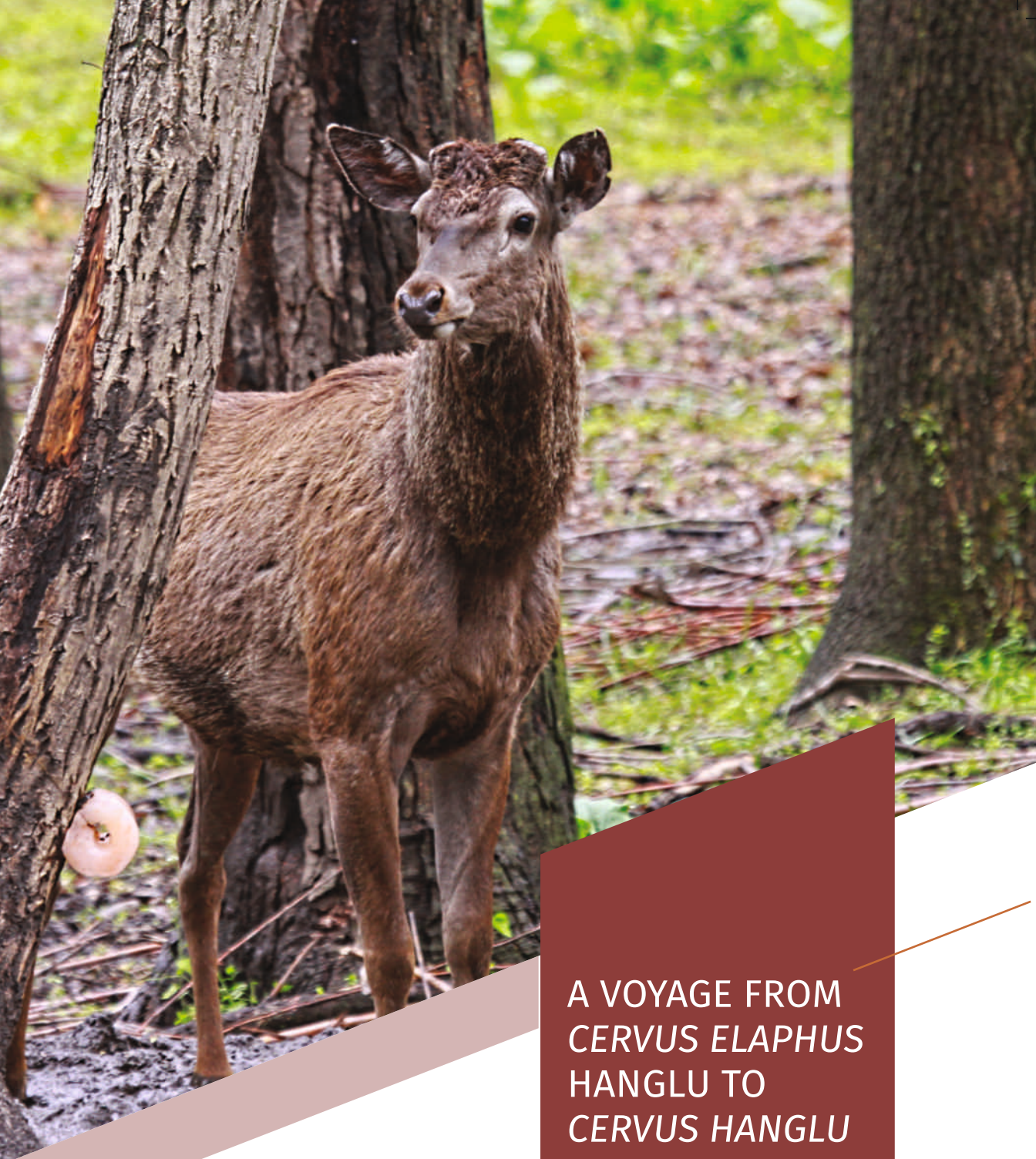
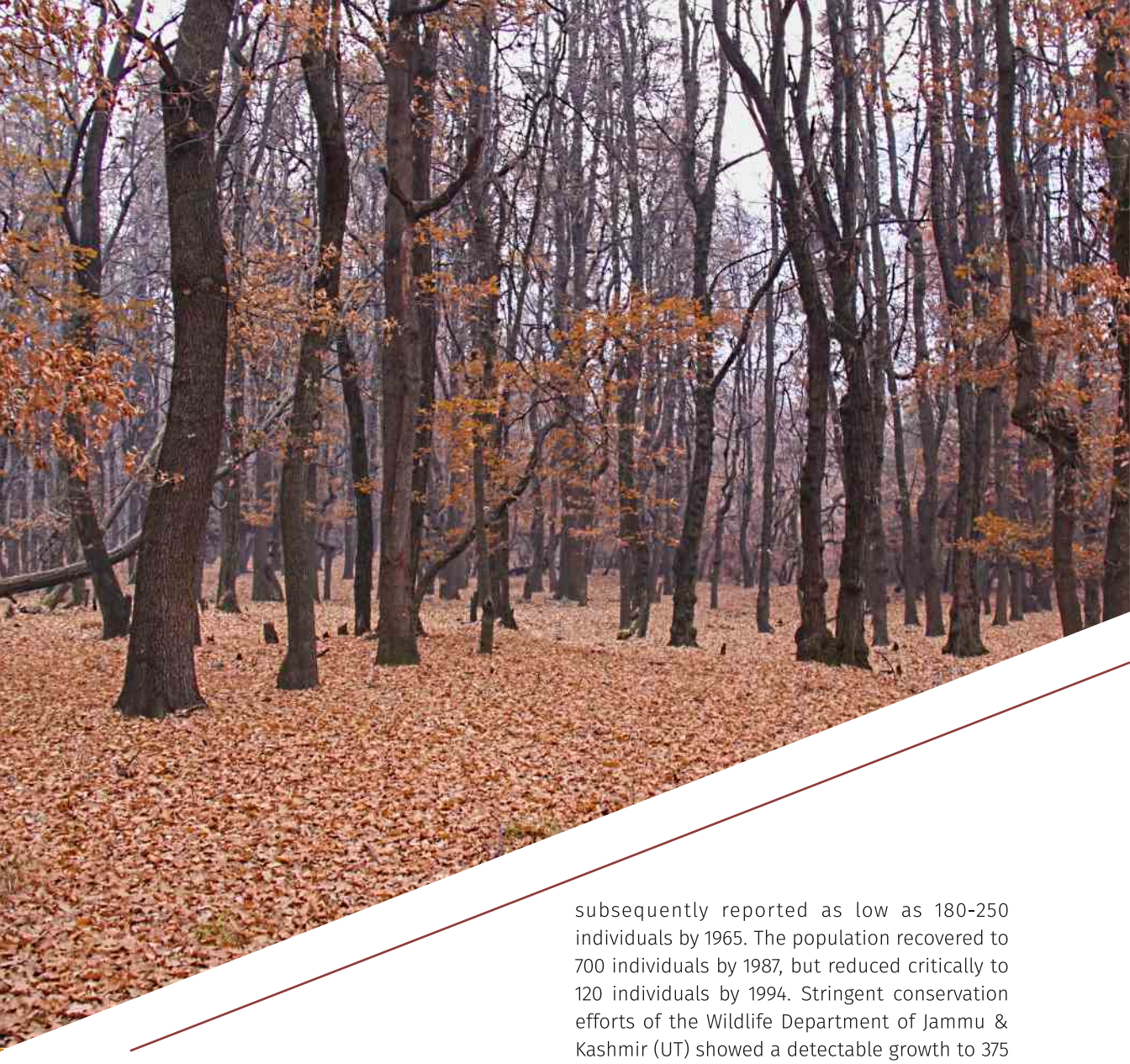


A VOYAGE FROM *CERVUS ELAPHUS* HANGLU TO *CERVUS HANGLU HANGLU*

Zoological Survey of India,1916

Species endangerment ranks, as declared by the national and international authorities, are often crucial in conservation decisions at the local and regional scale. While species are regarded as units of priority, widespread species with several subspecies are often neglected in conservation plannings and scientific research, irrespective of their genetic status and value for biodiversity conservation. Peripheral populations of widespread species are often rare and endangered while their status on the IUCN Red List is considered as 'Least Concern'. Discriminating conservation status at the subspecies level becomes challenging in situations where many subspecies are often incorrectly lumped into a single species complex. The hangul (*Cervus elaphus hanglu*), the only hope of Asiatic survivor of red deer species in India is a true example of a subspecies experiencing ignorance of the conservation union. However, It is listed under Schedule-I of the Wildlife (Protection) Act, of India (1972), J&K Wildlife (Protection) Act (1978) and also categorized among the top 15 species of high conservation priority by the Government of India. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) forbids the trade of hangul and lists in Appendix I.



The IUCN Red List had considered hangul a subspecies of red deer, and hence categorised as 'Least Concern' in the red deer complex. Despite the rigorous conservation efforts of the forest department in Jammu & Kashmir (UT), hangul has experienced a severe decline in numbers and range contraction in the past few decades. The hangul population, once occupying significantly large area of Western Himalayas covering an arc 65 miles in width, north and east of the Jhelum and lower Chenab rivers, from Shalurah in the north to Ramnager in the south, is now largely confined to Dachigam Landscape of Kashmir valley spanning over an area of ca. 1,000 km2. The hangul population over the past few decades has shown stunning fluctuations, once comprising of about 3,000-5,000 individuals during 1900s had declined to about 1,000-2,000 by 1947 and subsequently reported as low as 180-250 individuals by 1965. The population recovered to 700 individuals by 1987, but reduced critically to 120 individuals by 1994. Stringent conservation efforts of the Wildlife Department of Jammu & Kashmir (UT) showed a detectable growth to 375 individuals by 2002, which has declined further to 212 individuals in 2003. Latest census of the Hangul has revealed alarming decrease in the animal's population structure, with lowest ever male-female and fawn-female ratios. The census was conducted by State Department of Wildlife Protection and showed a marginal increase in Hangul population from 214 in 2017 to 237 in 2019.

ZSI's scientists, Dr Mukesh Thakur, Sci C and Dr Lalit Kumar Sharma, Sci C investigated the genetic variability and demographic history of hangul population for the first time and found a relatively low diversity estimates when compared to other red deer populations of the world. Surprisingly, hangul population depicted no bottleneck signatures in the past, and revealed that the population had not experienced any dramatic changes in the effective population size over the last several thousand years. Scientists propose that emergent loss in corridor functionality due to developmental processes and changes in the land use pattern will have serious repercussion for animal movements and maintaining genetic viability among the relic populations. Therefore, it is pertinent that conservation efforts should be concentrated on mapping, protecting and enriching those relic range areas where the potential hangul habitat still remains. In view of IUCN guidelines of exsitu-conservation, they strongly advocate that conservation breeding should be initiated as insurance the hangul population against extinction and to recruit new individuals to the wild population.

Considering current population structure, reduction in the distribution range, area of occupancy, extent of occurrence, number of mature individuals, population size, low genetic variability, low recruitment rate and imbalanced sex and female-fawn ratio, the hangul- a precarious subspecies of red deer, was upgraded to a species level in 2017 and elevated the conservation status from Least Concern to Critically Endangered. This elevation to the species level will attract immediate attention of biologists, park managers and policy makers to invest more efforts, time and funds to safeguard the dwindling population of hangul in India that has more regional importance than international value.

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