

POPULATION GENETIC STRUCTURE AND RECENT BOTTLENECKS IN A WILD, HIGH-ALTITUDE, MACAQUE: STRONG EFFECTS OF GEOGRAPHY AND ANTHROPOGENIC FACTORS

D. Chakraborty^{1,2}, U. Ramakrishnan², A. Sinha^{1,3}

¹*Nature Conservation Foundation, Mysore, India,* ²*National Centre for Biological Sciences, Bangalore, India,*

³*National Institute of Advanced Studies, Bangalore, India*

Presenter's Email: debapriyo@ncf-india.org and debapriyo@ncbs.res.in

The exceptional biodiversity of northeastern India, which is part of the highly mountainous Eastern Himalaya biodiversity hotspot, is threatened by anthropogenic landscape changes for at least a thousand years. The rugged topography of the region, together with periodic glaciation over the last few million years, has also fragmented this rainforest habitat into multiple smaller glacial refugia. These factors have been believed to shape the population history of nonhuman primates, causing population differentiation, or even extinction. We studied the relative effects of geography and anthropogenic factors on the phylogeography and demographic history of the newly-discovered Arunachal macaque *Macaca munzala*, a species known to be intensely persecuted by the indigenous people of the state of Arunachal Pradesh, northeastern India. We used mitochondrial DNA control region sequences of 28 skin samples, collected from local tribes, to estimate the extent and spatial patterns of genetic diversity over three geographically isolated sites, spread over approximately 300 km. The populations appear to be highly structured, following isolation by distance, for more than a million years. Data from 23 microsatellite loci also reveal recent drastic population bottlenecks, with the decline of about 90% of the ancestral size of each population, over the last thousand years. These results strongly indicate the significant historical effect of geography as also more recent, adverse human impacts on the population history of this high-altitude primate, findings of obvious importance in the future management of this endangered species.

Keywords: Arunachal macaque, phylogeography, population bottlenecks, conservation genetics