

FINE SCALE POPULATION STRUCTURE OF CHIMPANZEES AT THE SANAGA RIVER IN CENTRAL CAMEROON

M.K. Gonder, S. Locatelli, L. Ghobrial

Department of Biological Sciences, University at Albany – State University of New York

Presenter's Email: gonder@albany.edu

Of the four recognized chimpanzee subspecies residing across tropical Africa, two are found in the Gulf of Guinea region in present-day Cameroon and Nigeria (*Pan troglodytes ellioti* and *P. t. troglodytes*). The ranges of these subspecies converge at the Sanaga River, and there appears to be a genetic 'transition zone' between them around the confluence of the Sanaga and Mbam Rivers in central Cameroon. We present analyses of genetic data from >300 georeferenced DNA samples from chimpanzees collected across this region. The data set included mtDNA HVRI sequences and 45 microsatellite loci located on the autosomes and sex chromosomes. We used these data to test among a hierarchical set of hypotheses of potential population histories. Our analyses strongly suggest that the Sanaga River has played an important role in partitioning genetic diversity across the region. However, the data best fit an isolation-with-migration (IM) model. Our IM analysis suggests *P. t. ellioti* and *P. t. troglodytes* split roughly 200 thousand years ago. Ongoing migration occurs infrequently between these two subspecies, approximately once per three generations. This infrequent migration appears to be geographically limited to central Cameroon. The extent of migration between subspecies across this genetic 'transition zone' is correlated with abiotic and biotic ecological variation. We conclude that both forest history and the dispersal barrier created by the Sanaga River have played a key role in shaping the unique paleodemographic histories of chimpanzees across the Gulf of Guinea region. An NSF Physical Anthropology Senior Research Award and the University at Albany – State University of New York to MKG supported this research.

Keywords: Genetics, chimpanzees, biogeography, Cameroon