

**MONITORING MOVEMENTS: TRACKING UNHABITUATED CHIMPANZEES IN UGALLA, WESTERN TANZANIA USING A NOVEL METHOD – REAL-TIME ACOUSTIC LOCALIZATION**

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Researchers that study unhabituated animals face a daunting task, that of locating and monitoring elusive subjects and, sometimes, trying to condition them to human presence. In the case of open habitat chimpanzees in Ugalla, western Tanzania, this challenge is further exacerbated when one considers (a) the hypothesized home range of savanna chimpanzees being over ten times larger than forested populations and (b) that savanna chimpanzees live at one tenth the density of their forested cousins (in Ugalla, historical and recent estimates centre near  $\sim 0.03\text{-}0.2$  individuals/km<sup>2</sup>). Consequently, new methods to study savanna chimpanzees are needed. This paper describes a novel method for primatology - real time acoustic localization - to assist in locating and monitoring unhabituated chimpanzees. A solar powered microphone array that uses radio to transmit chimpanzee vocalizations to a central computer for real-time localization was developed. In total, twenty microphone units were deployed across a 27km<sup>2</sup> area between March 2009 - March 2010, allowing triangulation of callers. This talk will discuss this array in detail, with preliminary results describing localization accuracy calculated through calibration playbacks, chimpanzee call rates and temporal patterns of vocalizations, locations of calling parties, and counter-calling behaviour potentially to coordinate movements. Finally, the application of this method for expediting habituation efforts will be described

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