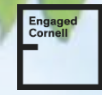


A Second Chance: Preparing for the Reintroduction of Fifty Chimpanzees to the Congolese Rainforest



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Abstract

Methods

Results

A group of fifty chimpanzees, *Pan troglodytes ssp troglodytes*, under the care of the Jane Goodall Institute's Tchimpounga Rehabilitation Center in the Republic of Congo has been slated for release to the wild in the spring of 2019. The preparation for the unprecedented release of a large chimpanzee community relies on multi-disciplinary expertise and action. Two major factors imperative to the success of the release were addressed in this study: 1) the social harmony and stability within the group, and 2) the non-invasive assessment of chimpanzee body condition and nutrition. To satisfy these requirements, the authors contributed to the establishment of an innovative approach to social integrations and a preliminary body condition score (BCS) system.

Part 1: Integration. To predict the possible dynamic of an integrated group, caregivers were asked to quantify chimpanzee personality traits using a subjective 1-7 scale. Important personality traits identified were: protective, provocative, aggressive, playful, and dominant. The optimal integration group was created based on previous interactions potential members had with identified dominants, as well as the dominant's ability to mitigate conflict. The introduction was conducted over a 30 minute period with at least four open cages to allow individuals to escape if conflict became too intense. Behavioral data was collected via 'focal' and 'universal' methods. If the integrated group showed affiliative behavior with a clear dominant, it was allowed to spend the night and considered integrated. The new group was then observed for several days to ensure stability. Additional new members could then be added by creating subgroups from this larger group and employing the same integration strategies.



Figure 2: One of the head care takers creating groups for integration

Part 1: Integration. An integration of 35 individuals including 5 adult males was successfully performed. Similar success was seen in creating large groups with multiple adult males per group in other locations. Methods that proved successful included the creation of subgroups; adding food to the integration area; designing groups based on provokers, protectors, and dominants, breaking close bonds to avoid coalitions, and adding companions of one dominant in the introduction group of another dominant. The group of 35 chimpanzees remains stable with a clear dominant and numerous protective social bonds that reduced conflict. Additional chimpanzees are currently being integrated into this group, and the solidification of the community will take approximately two years.

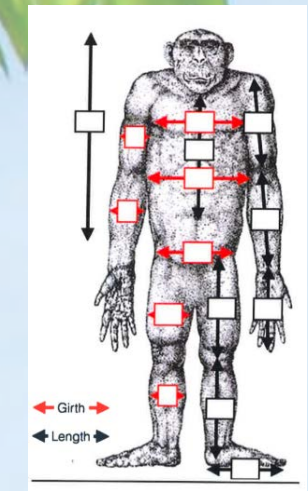


Figure 4: Data sheet used in morphometric data collection



Figure 1: Kefan (left) and Elikia (right), two dominant males enjoying each other's company after a successful integration.

Part 2: BCS. Several hundred photos were taken of anesthetized chimpanzees in standardized positions and analyzed by multiple persons. Scores 1-5 were assigned based on observation of recognizable anatomical landmarks, such as spine visibility, the slope between ilium and ischium, and concavity of the ischio-rectal fossa. Exemplar photographs from each scoring grade were selected and translated into sketches (Figure 3). The validation of this scoring system will rely on biochemical markers for both malnutrition and obesity, morphometric data, and demonstrated repeatability amongst caregivers. Biochemical parameters were determined via serum and whole blood analysis of chimpanzees. Morphometric data was recorded in a systematic method by one individual for control purposes (Figure 4). A training regime for caregivers is currently under development.

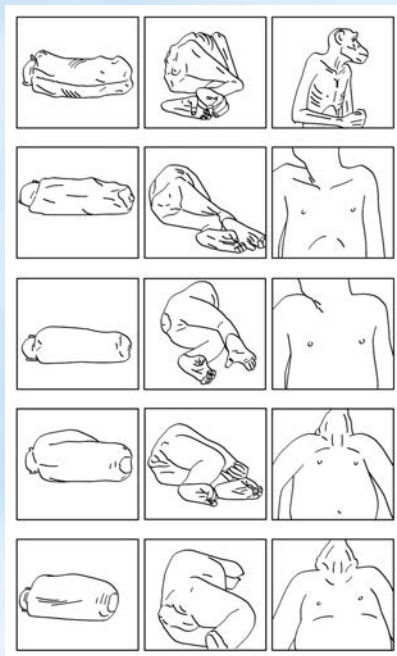


Figure 3: Example of the BCS chart with scores 1-5

Part 2: BCS. Assignment of over 100 chimpanzees to a BCS score 1-5 was successfully completed. Preliminary biochemical parameters identified for undernourished chimps included anemia and hypoferritinemia, which were consistently recorded in most chimps scoring either 1 or 2 out of 5. Markers for obese chimps were more variable, though hypertriglyceridemia was present amongst the chimpanzees scoring either 4 or 5 out of 5. Morphometric data was collected for all chimpanzees studied, and is currently undergoing analysis. The results of this study are preliminary and require statistical analysis to determine the significance of biochemical markers and the correlation between subjective scores and serum abnormalities. The BCS system requires application to other populations of chimpanzees and demonstration of consistency amongst multiple observers after a training session before it can be reliably validated.

Conclusion and Project Sustainability

The longevity of a wild chimpanzee community relies on its inherent social harmony, as well as the ability of its members to obtain adequate nutrition. Prior to release, the creation of a sound community can be achieved through strategic integration practices with the anticipation that these bonds will be upheld in the wild. After release, non-invasive monitoring of chimpanzee well-being can be achieved through systematic observation within a well-defined scaffold. The Jane Goodall Institute is committed to caregiver involvement in the development of an integration strategy and BCS monitoring as a means of incorporating the native Congolese population and safeguarding the sustainability of the proposed practices. Though preliminary, the authors believe that the proposed strategies for social integration and nutritional monitoring can significantly contribute the success of the world's first rehabilitated and released chimpanzee community, opening the door for the re-establishment of wild populations across Africa.

Introduction

In addition to physical health, the survival of a chimpanzee in the wild depends on a defined and accepted role in his/her community and foraging and hunting skills necessary for adequate nutrition. The Jane Goodall Institute (JGI) has established a large group of strategically chosen chimpanzees that will be released to a protected forest in Conkouati-Douli National Park. With a socially solidified group and means for non-invasive evaluation, this community of chimpanzees may be the first of its kind to be successfully reintroduced to the wild.