Heritable Behavioral Tendencies of the African Lion

Natalie Mercer- Biology Major, Natural Sciences and Mathematics Division, Kentucky Wesleyan College, Owensboro, KY

Shannon Finerty, PhD. Natural Sciences and Mathematics Division, Kentucky Wesleyan College, Owensboro, KY

The African lion, *Panthera leo*, is a vulnerable species and is the only member of Felidae to live in family groups. Therefore, captive-breeding and release programs, such as the one operated by the African Lion and Environmental Research Trust (ALERT), must consider the social cohesiveness among individuals considered for release together. The purpose of this study was to determine to what extent behavioral tendencies are the phenotypic expressions of quantitative traits in *P. leo*. It is hypothesized that in each behavioral category the percentage of time spent performing activities during daylight hours varies significantly among individuals of the same gender and relatedness value. Behavioral observations were recorded over hour-long focal follow periods every two minutes and subsequently compiled into individual activity budgets. Phenotypes for any given behavioral category are expressed as the percentage of daylight time spent in the activity. A preliminary example of variation between activity budgets can be given by AS5 and his parents, Ashanti and Milo. While AS5 socialized 2% of the time and interacted with the environment 28% of the time, Ashanti socialized 2% and interacted with the environment 33% and Milo socialized 1% and had a 16% interaction with the environment. The relationships between social bond formation and similarity of behavioral phenotypes and relatedness are also being explored. Quantitative genetic analyses will likely be done with the SOLAR-Eclipse statistical program, and social association data will likely be analyzed with the Socprog statistical program.