Title: West African Elephant Conservation in Burkina Faso – Ecosystem Dynamics in a Conservation Environment

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Abstract :

The West African elephant is unique and deserves conservation management tools that are targeted to its context, taking into consideration the health of small, isolated populations and human-animal conflict. A database of natural resources, human competition, and elephant health for Arly National Park and its buffer zone was created, informed by a conceptual population model that includes the impacts of stresses expressed as gastrointestinal parasitism, body condition scores (BCS), incidence of human/elephant conflict, and habitat limits. After one year of data generation, GIS has proven to be a useful tool in evaluating human-elephant conflict in the buffer zone. In addition to creating a baseline analysis of agriculture and livestock production location and intensity, the tool has allowed for the spatial and temporal analysis of types of human-elephant conflict. Statistical analysis of individual datasets has shown that the prevalence of strongyles and *Strongyloides sp.* in Arly elephants is high (81% and 44% respectively), with prevalence and level of parasitism being higher during the rainy season. BCS have proven to be an insensitive tool, using existing methodologies developed for Asian elephants. The utility of GIS in analyzing health data will be tested over time. The second phase of this project involves the development of tools for decision makers. A mathematical population model for elephants in Arly will be created using a refined and strengthened database, and a correlated risk map created. The database will also be used to involve buffer zone communities in research, analysis and action planning through participatory GIS.