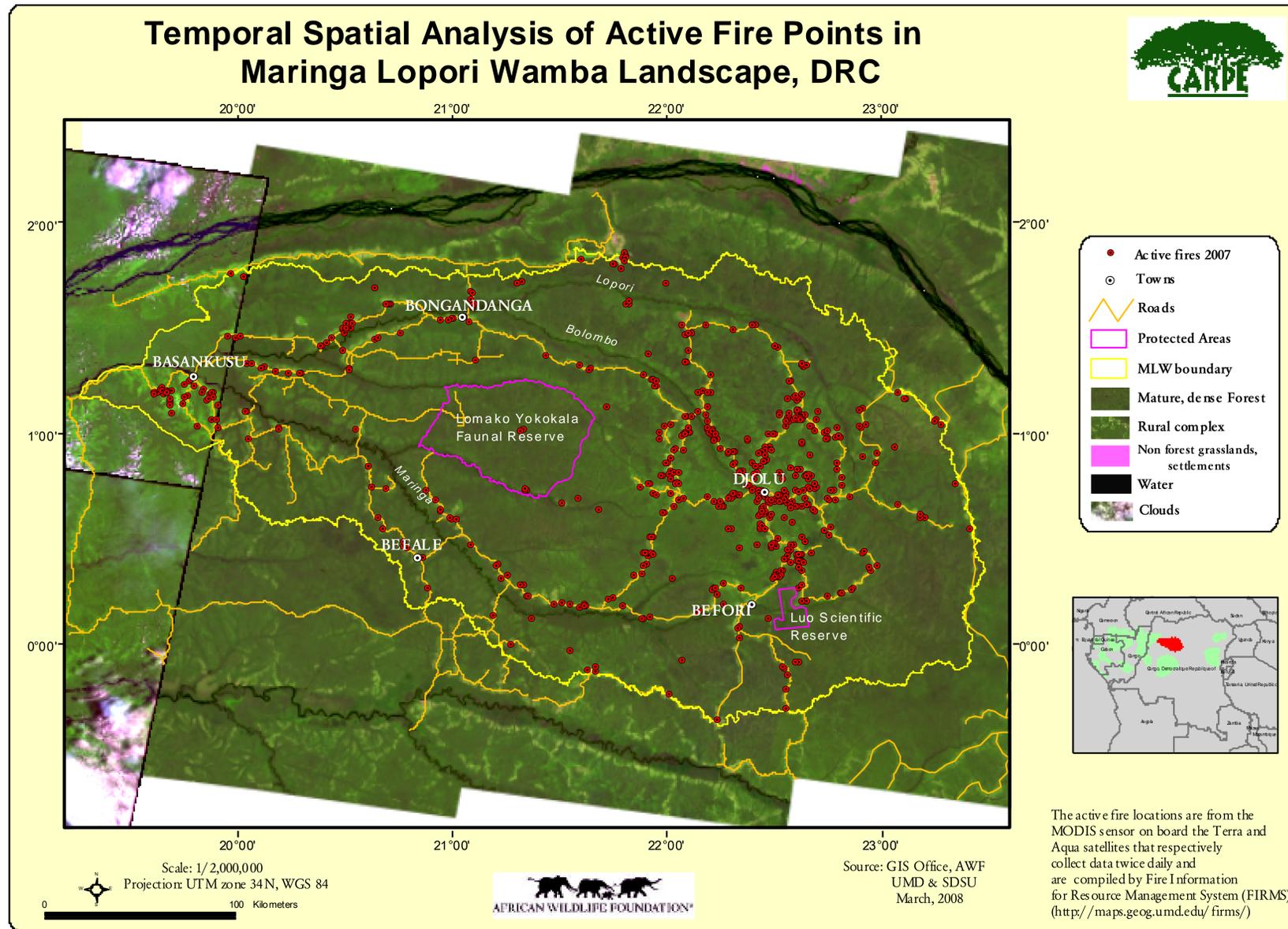


Monitoring of active fire points in the Maringa Lopori Wamba Landscape using Terra/Aqua sensors for cost and time effective evaluation of the impact of the CARPE program on habitat/canopy destruction

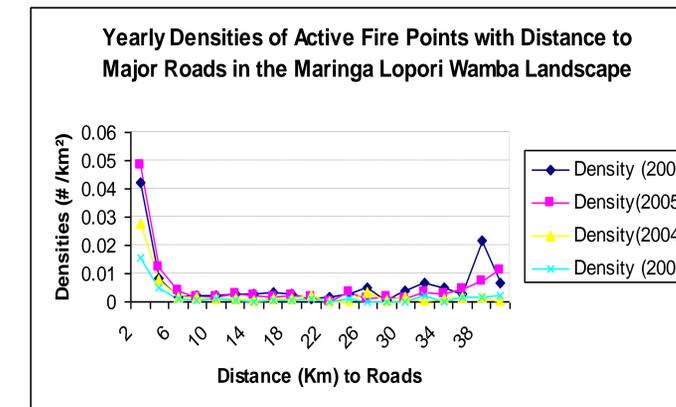
Introduction

Conservation and development projects often lack adequate adaptive tools to decisively evaluate project impact. The central strategic objective of the Central African Regional Program for the Environment (CARPE) is to decrease habitat or canopy destruction in the Congo Basin, through improved natural resources management guided by Landscape Land Use Planning (LLUP). African Wildlife Foundation (AWF) is researching the use remotely sensed daily active fire locations as a tool to evaluate the impact of the LLUP program on reducing habitat and canopy destruction in the Maringa Lopori Wamba Landscape. Habitat destruction in the Congo Basin is mainly caused by slash-and-burn agriculture, or clearing of forest with fire to establish new camp sites. We are comparing spatial/temporal trends of active fires with trends in habitat destruction to determine if active fires can accurately reflect different types of habitat destruction.



Preliminary results

A preliminary assessment of active fire points in the Maringa Lopori Wamba Landscape (USAID/CARPE) reveals a 6.5% increase between 2003 and 2006. Most fire points (69.3%) are within 2 km from roads and existing settlements. 16 % of fires are at a distance of more than 4 km from roads, indicating pressure on previously less accessible forests.



At 40 km from the road axis where primary forest is predominant, the slight increase in fire density (2006) may reflect the presence of hunting camps in the Lomako Yokokala Faunal Reserve and the creation of some fallow around the hunting camps following human activities by Kitawalistes (Jehovah witness dissidents since 1961. They created their own sect and deported themselves into Equator forest since then).

Conclusion

The implementation of LLUP-program should reveal increased human activity within designated agricultural zones, and reduced slash-and-burn-driven habitat destruction in more remote forests. The successful development of cost-effective methodologies to monitor changes will allow AWF to measure the landscape-level impact of conservation and development initiatives.



Slash and burn clearing

Data source and methods

The active fire data locations are from the MODIS sensor on board the Terra and Aqua Satellites that respectively collect data twice daily and are compiled by the Fire Information for Resource Management System (FIRMS: <http://maps.geog.umd.edu/firms/>)

We are examining relationships between deforestation detected by South Dakota State University (1990 – 2000 – 2005) using Landsat imagery active fires, and fires activities observed in the field. We are currently making some significant assumptions. By grounding these remotely sensed datasets using field observations, we hope to use these tools to improve our understanding of fire's relationship with human and wildlife migration patterns.



Using satellite imagery to review fire Locations and plan field work



Data Collection of burned patches using GPS

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