GIS in the South African National Parks

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Spatial information is fast taking over in everyday working environments. To be able to work efficiently spatial information should be readily available to aid with daily tasks and decision-making. The Conservation Development section of the South African National Parks (SANP) has undertaken to make this a possibility in the organization. Following a meeting at SANP Head office a task group was established to address various issues concerning the use and implementation of GIS technologies. The vision is to have a central data warehouse where all the spatial (and where relevant non spatial) data will be stored in a relational database. This data warehouse will be served by five regional GIS nodes (data marts) that will be responsible for specific parks that have been allocated to them. The five regional offices will be at Skukuza (serving the Kruger National Park); Kimberley (serving Augrabies, Richtersveld, Golden Gate Highland, Limpopo Valley, Namaqualand, Kners Vlakte National Park, and the future area between the Groen River and the Spoeg River); Port Elizabeth (serving Vaalbos, Marakele, Mountain Zebra, Addo Elephant National Park and the Kgalagadi Transfrontier Park); Rondevlei (serving West Coast, Tankwa Karoo, Tsitsikama, Wilderness, Bontebok and Agulhas National Park); and Pretoria (serving all the parks at a more superficial level). The Cape Peninsula National Park (CPNP) has a large, World Bank funded Spatial Information System project in progress, using identical technology platforms as the regional GIS nodes and eventual central data warehouse and as such is also a regional office, albeit a special case.

The function of the central data warehouse will be to: set up and maintain the GIS database; provide necessary data and support to the regions; obtain new and validated data from the regions; obtain new and validated base data from other SADEC data custodians for the regions; serve as the backup facility for this data; serve Public Domain data and other related information via the internet.

The data marts will each be responsible for: capture and verification of research data; maintaining of the data; provision of data to the parks that fall in their region; training of the relevant personnel in the use of simple GIS and mapping applications according to their specific needs; application of the data and GIS software for spatial modeling and value adding to existing data; communicating with park managers, defining their data requirements, types of decision making and producing GIS applications.

A data audit has been completed to determine what data is available per region, the condition (quality and accuracy) of the data, as well as potential sources of additional data. A hardware audit was also conducted which proved that the current hardware at three of these regional offices is not adequate for GIS. This issue is currently being addressed.

For this venture to be a success, existing standards and protocols must be adhered to. Where this is not applicable, new SANP-specific standards will be defined. The ultimate aim will be to have an Internet server-based application where spatial data can be viewed and extracted.

The success of this venture will depend on regular workshops and information sessions and the degree of commitment and participation of both research and management.