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Claire Patterson-Abrolat

Airport Wildlife Working Group, Endangered Wildlife Trust, Private Bag X11, Parkview 2122, South Africa

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The Use of an Integrated Geographical Information System at South African Airports

Claire Patterson-Abrolat

Airport Wildlife Working Group, Endangered Wildlife Trust, Private Bag X11, Parkview 2122, South Africa

The use of Geographic Information Systems (GIS) has, over the past few years, become an integral component of the operations at all airports owned and/or operated by the Airports Company South Africa (ACSA). What has however been lacking, is the application of this technology to practically manage and reduce risks out on the airfield. ACSA Bird and Wildlife Management has recently initiated a programme to utilize GIS and global positioning systems (GPS) on their airfields and all ACSA Wildlife Control Officers (WCOs) are now using handheld mobile computers with integrated GPS to record information and track their patrols out on the airfield. This integrated system allows for the recording of biological data such as bird or wildlife presence, as well as the recording of hazards such as standing water, termite nests, fence breaks, grass which needs cutting, and the presence of foreign object debris. A built-in e-mail system allows for rapid and precise information sharing as the presence of hazards are marked on a grid cell map. The reporting system allows for real-time feedback to management meetings and adaptive problem management. The system also allows for the manual capturing of information regarding routes and observations without using the handheld GPS unit. This will be especially useful for smaller airports with a lower risk profile and where Fire and Rescue personnel record the information in the absence of dedicated WCOs. An additional advantage of the system is that it has been designed in a manner that allows for the development and integration of other management and reporting systems such as grass-cutting management tools, runway inspection reports, fence security patrols and weather data which will greatly enhance the proactive management steps taken at the airports.

Abstract of poster presentation at Bird Strike Committee USA/Canada Meeting, Lake Mary and Sanford, Florida, August 18-21, 2008.