Geophysical Research Abstracts,
Vol. 11, EGU2009-1900, 2009
EGU General Assembly 2009

Using Remote Sensing and GIS to monitor and manage Invasive Alien Species in Pico da Vara Protected Area (S. Miguel - Azores Archipelago)

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Keywords: Vegetation Mapping, Invasive Monitoring, Protected Areas Management, Remote Sensing

Abstract (Poster Presentaion): S. Miguel, the biggest and most populated island within the Azores archipelago, is located in the North Atlantic Ocean, about 1500 km from Europe. Its vascular plant flora, consisting of approximately 1000 taxa, is largely dominated by non-indigenous taxa (66%). However, existing indigenous vascular plant taxa are particularly important because they compose a very valuable ecosystem: the Azorean Laurel Forest. Its most important occurrence area is located in “Pico da Vara” Protected Area. The rapid spread of invasive alien plant species as Hedynchium gardnerianum, Pittosporum undulatum and Gunnera tinctoria, is causing serious damage to this ecosystem. Their direct competition with native species has resulted in a significant decline in native populations and ecosystem area. In the past 4 years, all the monitoring data used for invasive species management in “Pico da Vara” has been obtained by expensive field work methods: twenty 10x10m and ninety 2x2m random plots. Although this information is very valuable and still needed, it only covers and characterizes a very small part of the total area (about 6000 hectares). Geospatial technologies such as Remote Sensing and GIS can reduce costs and increase the efficiency and effectiveness of invasive management program for certain species that spread in homogeneous, dense and large populations. This poster shows the baselines of a research project wich goal is designing a reliable method to detect and monitor invaders, for management support-decision, using multitemporal Aerial Photography (coloured and B/W orthophotomaps), High-Spatial Resolution (Quickbird) and Hyperspectral (Hyperion) Remote Sensing Data.