Wildland / urban interfaces characterization using remote sensing data

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Abstract

In the context of forest fire prevention, the Cemagref in Aix-en-Provence is developping, with remote sensing tools, a method of spatial analysis in cartography and characterization of the interfaces between wildland and urban areas.
The aim of this study is to group zones having similar profiles with regard to fire risk exposure.

The method described bellow was applied in south of France, in a very sensitive zone between Marseille and Aix-en-Provence.
In a first part, we improved a supervised classification on very high resolution satellite data. We obtained very precise land use map.
Then we analysed this map in a contextual mode in order to be able to describe different kind of vegetation (height, sparse, …).
Then we improved spatial analysis tools in order to describe the spatial organisation of the land use and specially houses organisation inside or near the forest. We used some indicators belonging to landscape ecology (fragmentation, diversity, desnity …).

Finally, better charaterization and automatic cartography of these interfaces should, in the long run, enable them to be charaterized with regard to fire risk by integrating them into a complete fire risk evaluation model, in order to develop preventive actions.