



Mapping and Monitoring Snow cover and its changes over a 40 years period for the White Mountains of Crete, Greece

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The study of snow coverage and how it varies due to climate change in a specific area for a certain period provides extremely important results. Information on the snow cover and of its changes is essential for both global scale in evaluating future climate change scenarios and catchment scale for water resource management. To this direction, remote sensing has a significant contribution as it offers rapidly, cost-effectively and in frequent time intervals spectral information in a wide range of spatial scales that can be used in snow analysis.

The "White Mountains" is the main mountain of Chania Prefecture, found in the west part in Crete Island. This is the most mountainous and arid region of Crete with shallow, poor, rocky and with steep slopes soils. The amount of precipitation received on the higher parts of the mountain is more than 3000 mm per year. The snow melting often delays until mid-June due to the low temperatures prevailing in the mountains.

This mountain and its snow cover have been the subject of this study. The aim of the study is to determine with the use of remote sensing and Geographical Information Systems (GIS) the snow cover and its changes over the last 40 years in the area. Information extraction on snow cover and its changes will be based on a time series analysis of earth observation data applying the method of remote sensing - photo interpretation, assisted by a GIS that will be developed to facilitate the data analysis.

Results from this study will be analyzed in comparison to other ancillary historical data coming from environmental and global records for the site.

KEYWORDS: snow cover mapping, Landsat, White Mountains, Crete, Greece