

**THE IMPACT OF URBANIZATION ON TROPICAL WATERSHED HYDROLOGY IN WUSHISHI USING REMOTE
SENSING**

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ABSTRACT

Future population growth and the corresponding increase in development in the wushishi. Watersheds are widely recognized as major threats to the integrity of watershed worldwide. The potential impact associated with the expansion of developed land, and specifically with the increasing amount of impervious surfaces- roof tops, sidewalks, roads, and parking lots- may include significant changes in water quantity, degradation in water quality, and habitat laws. Because asphalt, concrete, stones and other impenetrable materials effectively seal the ground surface, water is repelled and is prevented from infiltrating soil. Instead, storm water run-off flows directly into our surface waters, depositing metals, excess nutrients, organics and other pollutants into the receiving bodies. In addition to these environmental impacts, increasing levels of imperviousness can dramatically alter our landscape, as forested and other natural settings are converted to urban/suburban uses. The primary goals of this project were to provide an accurate, current description of the extent of impervious surface coverage in this region, as well as an estimate of change in the amount of "imperviousness" over a 14 year period (from 1987 to 2009). A detailed characterization of the watershed was also conducted. Geospatial technologies provide effective tools to map and quantify impervious surfaces, and to monitor changes over time. Moderate resolution Landsat Thematic Mapper (TM) satellite imagery, as well as an image processing GIS Software, was utilized to estimate amount of imperviousness at relatively modest cost, thereby providing a mechanism for subsequently measuring "imperviousness" at frequent, repeated intervals. Resource managers and other professionals may effectively utilize the resulting data as they develop watershed Management plan and tools.