GIS AND REMOTE SENSING APPLICATIONS IN ANALYSIS THE CHARACTERISTICS OF FOREST LANDSCAPE FRAGMENTATION IN LAM RIVER BASIN

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ABSTRACT

Forest fragmentation of the Lam basin was studied with the aid of the Infragmentation tool in GIS, with satellite imagery and current basin land use maps data. Landsat 8 (data acquisition time was1st of April, 2007, source: http://glovis.usgs.gov) was analyzed by the supervised classification in the Envi software based on the spectral characteristics of natural objects. The land use map of Ha Tinh and Nghe An provinces in 2017 was provided by the Department of Natural Resources and Environment of Ha Tinh and Nghe An provinces. The data was processed by the Fragmentation tool that is installed, integrated in ArcGIS software in order to analysis, sorting and extraction of information on landscape as well as forest fragmentation. The results show that the forest landscape of the Lam basin is fragmented into four main types: core forest, patch forest, edge forest and perforated forest. The core forest occupies the largest area and is divided into three categories (small core forest, medium core forest and large core forest). Each type of forest fragmentation with its characteristics and structure requires an appropriate management method. The forest landscape in the upper Lam River varies from 2007 to 2017 with the following major trends: large core forest area increased 2.5%, the rest reduced. This demonstrates the effectiveness of protection and conservation in national parks and nature reserves.

A REAL-TIME MOBILE-BASED FRAMEWORK FOR TRUCKS MONITORING IN OPEN-PIT MINES

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ABSTRACT

Vietnamese open-pit mine companies currently use GPS devices integrated with trucks for monitoring the transportation. The GPS devices send data regularly to a software system in the center via cellular networks. The solutions, which is also popular in passenger transport, however, faces with several issues such as lacking real-time interaction with the center management, losing data if there is no internet connection, long delay, etc... In this paper, we propose a new real-time framework for monitoring trucks using smartphones. Smartphones attached in trucks send data to a web-based software system and drivers can interact with the management team in the center. The web-based center software receives data, then displays the movement of trucks with very short delay after performing route enhance algorithms.