Environmental Impact Prediction Of Road Construction Projects On Natural Habitats Using Remotely Sensed Images(Case Study: Qazvin-Rasht Highway, Iran)

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One of the most challenging parts of an Environmental Impact Assessment (EIA) is to identify and evaluate severity and extent of project's destructive affects on environment. During this study a new method has been developed to predict environmental impact. For this purpose, remotely sensed images in Qazvin-Rasht Highway area, Iran during years of 2004-2008 were used. Although natural habitats including Fauna and Flora are exposed to destructive affects in different various aspects, natural vegetation cover extent and density was chosen as a main environmental element. Changes in extent and density of vegetation cover can be calculated by change detection algorithms between selected images. In this study maps of vegetation cover in Iran are produced using Advanced Space borne Thermal Emission and Reflection Radiometer (ASTER) images with spatial resolution of 15m. Vegetation cover obtained from NDVI index is classified in different species by classification methods. The next step is calculation of changes between pixels of images via existing change detection algorithms. Regression models were developed to predict the project activities impacts on vegetation. Forecast model of environmental effects on Flora can be so helpful in Environmental Impact Assessment of road construction projects especially in variants selection phase. It provides useful information for decision makers to select less harmful corridor to construct.