**Applications of Multitemporal Optical Images**

**for Forest Resources Study in Mongolia**

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**ABSTRACT**

Forests are an important natural resource that should be carefully managed, because on one hand they maintain an ecological balance and on the other hand they provide the raw material for a wide range of wood-based industries. In general, intensive and effective forest management requires reliable inventory data and maps indicating the current state of the forest. Generally, forests are managed for an evolving constellation of objectives: timber and other commodities production; environmental stability, ecological balance, maintenance of wildlife habitat; water quality protection; wilderness and open space preservation; and, in the coming years, as a buffer against climatic change, and effective management of these resources, requires reliable and timely information about their status and trends.

Over the years, remote sensing (RS) has been widely used for forest monitoring and management, because it provides real-time information about the state and conditions of forests. The aim of this research is to analyze the forest resources in the Bogdkhan Mountain, which is a nature reserve with protected status situated in Central Mongolia. Within the framework of the study, it was assumed that there is an operational geographical information system (GIS) that stores different thematic layers and there is a need to check the reliability of the forest layer using RS data sets. For the analysis, multitemporal optical images as well as some other thematic maps have been used and different RS and GIS techniques were applied.

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