EARTH OBSERVATION SYMPOSIUM (B1)
Biodiversity (6)

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SPACE TECHNOLOGY AND INTELLIGENT MATHEMATICAL MODELS FOR BIODIVERSITY MONITORING IN AZERBAIJAN

Abstract

Biodiversity is very important for humans and all other species on the Earth. Without the diversity of species, ecosystems are more fragile to natural disasters and climatic change. With an increase in the rate of species extinction, we must conserve ecosystems and rare species by choosing right methods that are sustainable on the basis of appropriate science and human needs. Forest resources in Azerbaijan are very abundant, but environmental carrying capacity of the region is vulnerable, thus when using them we must think of conservation at the same time.

They provide a wide range of products and services to people throughout the world. Forest trees and other plants help support many other organisms, and have developed complex mechanisms to maintain high levels of genetic diversity. This diversity is the fundamental basis for the evolution of forest tree species and for their adaptation to environmental changes. Conserving forest genetic.

All forests are State-owned and act to provide water protection, soil protection and climate regulatory functions. Forests are managed by the Department of Forest Development, part of the Ministry of Ecology and Natural Resources. The variety of soil and climatic conditions of the country led to the spread of forests with a very rich natural composition. There are over 450 species of trees and bushes, but the vast majority (covering 88 % of the total forest area of the State Forest Fund) belongs to hard-wooded broadleaved species. Softwoods and coniferous trees represent 2.2 % age index of forests in the mountainous part of Azerbaijan is different to lowland areas, being on average 86 years old in mountainous areas and 40-60 years old in lowland areas, though the difference is in part driven by differences in species composition in each of the areas. At the start of 2011 the average age of the forests of the State Forest Fund was 84 years, including coniferous trees at 79 years, hardwood broadleaved trees at 86 years, and softwood trees at 50 years old. The main part of the forest area is occupied by young and middle aged (10.75%) stands and by mature and over-mature stands (12.6%).

To use high resolution space images and GIS technology have became increasingly useful in monitoring of biodiversity. On the base of intelligent mathematical methods were developed software modules for the study of dynamic changes.