GIS based forest cover change detection in the Çamsu Forest Sub-district

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Abstract: Forest management plans are one of the main parts of the forestry activities. In these plans, the choice of optimal goals and explicit objectives makes it possible to ensure that the economic, ecological and social functions expected from the forests are sustainable. In order to make the decision, detailed and accurate spatial data about the forests in the planning units are needed. Detection and monitoring of changes in forest areas provide valuable information for evaluating the spatial and structural state of forests. The assessment of the effects of forestry practices in the past is important with a view to understanding the direction and amount of the change in forest areas. It can also be used in the decision-making process for the future. The aim of the study is to detect the changes in the forest cover from 1990 to 2013 in the Çamsu Forest Sub-district located in the west of Turkey. Approximately 85% of the forests, which consist of usually pure black pine stands and rarely mixed stands of black and red pine species, are productive in this region. The stand type maps produced in 1990 and 2013 were compared by using the Geographical Information System. As a result of the overlay analysis, spatial change maps of the forest cover in the region were produced and the areal changes were calculated. It is suggested that the data on change obtained by using the tools of the geographical information system will provide support for the decision-making process in the planning of the forestry activities of the implementers.

Keywords: Change detection, GIS, Forest cover, Overlay analysis, Çamsu