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A new approach for the determining EUNIS habitat types with using forest digital management maps in biodiversity surveys: A case study of the Araç State Hunting Grounds

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Abstract: European countries have developed different habitat classification systems to efficiently and regularly utilize natural resources, identify their available resources and build databases. These different systems used by the countries have been combined at the EU level to develop a common classification system which is called the European Nature Information System (EUNIS). According to EUNIS, habitat is the place where plants or animals live naturally and firstly it is described by their physical characteristics (topography, plant or animal physiognomy, soil characteristics, climate and water quality etc) and secondly by their existing species. The smallest EUNIS habitats are at least 100 m^2 and the widest scale has no upper limit. Establishing EUNIS habitat types in biodiversity studies is important in determining where sampling will take place. Completion of habitat maps before biodiversity surveys will provide insight for experts from different subjects. In the contrary case undetected and unexpected habitat types may show up. Forest Management Maps were used for identifying EUNIS habitat types in this study. The codes used in management maps were adapted to EUNIS and "EUNIS Habitat Map" was created based on scanned raster digital maps of 1: 25.000 scale. In the GIS environment, stand types were determined as pure and mixed forests digitally. In addition, canopy closure and age classes of the types forming the stands were taken into consideration. Species compositions of the mixed or pure stands, canopy closure condition, closeness to water communities and elevation from sea level were compared to ecological characteristics in EUNIS habitat codes in order to find corresponding. Codes such as forest land, pasture, stony land, erosion, agricultural land, settlement, dune, mines, water and other foliage in the management maps were corresponded to EUNIS habitat codes then placed in the ArcGIS program in order to make EUNIS habitat type map.
Keywords: EUNIS, Habitat types, GIS, Biodiversity