

Plant Richness of Fir (*Abies nordmanniana* ssp. *bornmuelleriana*) Stands Ranging at Aladağlar (Bolu) Region of Turkey

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Aim of the study: Forest ecosystems are important areas in terms of biological diversity. Currently, forest areas in Turkey are managed under ecosystem-based multiple use planning approach by trying to consider biological diversity, beside other ecosystem services. Sustainable management of these areas is only possible with a good understanding of relations among the elements of forest ecosystems. In this study we aimed to carry out the plant richness of managed Fir (*Abies nordmanniana* ssp. *bornmuelleriana*) stands having different structural characteristics in Aladağlar (Bolu) region of Turkey.

Material and Methods: The study is realized in fir forests at Aladağlar (Bolu) region of Turkey. Fir forests in the area are managed for wood production for many years based on selective cutting techniques. These stands are grouped under 4 stand types as GA, GB, GC and GD based on distribution of number of trees to diameter classes. The inventory design is based on to carry out the plant species at different aspects (North and South) of these 4 fir stand type along the vegetation period in different months (June, July, August and September). 10 quadrat samples on transect lines were taken from each different stand types (4), aspects (2) at different observation times (4) with replication (2). Data are collected from totally 640 (10*4*2*4*2=640) quadrat samples which are 0,25m² (50cm*50cm). Quadrat samples at different observation times were taken randomly on the pre-determined transect lines at each stand. Number of individuals and closure of each different plant in the quadrats were recorded in the field. Samples or photo from the unknown plants were taken to identify them in the herbarium.

Results: Totally, 122 taxa were identified in the fir stands along the 4 observation periods. 63 of these taxa were identified at species level while 49 at genus and 2 at family level and deposited in DUOF Herbarium. The number of taxa which could not identified because the vegetative and generative organs were not developed enough to be able to identify is 8. While some taxa (*Galium verum*, *Echium vulgare*, *Dorycnium graecum*, *Asperula involucreta*) were seen only at some stands, some other (*Cyclamen coum*, *Daphne pontica*, *Doronicum orientale*) were observed in all the stands. This situation is also true for aspects and observation periods. While some taxa were seen only at one aspect or one of the observation periods, some other were observed all times at all aspects.

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Keywords: Plant richness, biodiversity, Fir, Turkey.