

that poor environmental conditions hinders the contribution of growing stock on CAIv. The highest coefficient of determination and structural fraction was obtained in protected Mavrovo beech forest ($R^2=73\%$). Coefficients of determinations range from 41% to 72% in Bosnian forest sites. Proportions of CAIv variations related to growing stock and environmental explanatory sets in Bosnian stands emphasize importance of adequate management treatments that could support positive effect of environmental conditions or compensate their negative impact. Applied analysis show potential to qualify forest stands related to their structural and environmental contribution to the current annual increment of volume. In further research could be included additional structural variables, canopy, tree mixture, soil properties, climate data, and other environmental variables.

Key words: current annual increment, growing stock, topography, Sentinel 2A vegetation indices, partial correlations, fraction of variation

Management and regeneration potential on over-mature coppice sessile oak forests stands, case study in Bushava Planina

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Coppicing is a dominant silviculture system in Macedonia and coppice forests cover cca 70% of forest cover area. According to Forest Management Plans (FMPs), sessile oak coppice forest (SOCF) cover 163.037ha (in 2017). They are divided into four types: i) quality sessile oak coppice stands (SOCS) on quality sites, on 39.306ha, ii) low-quality SOCS on quality sites, on 11.2179ha, iii) low-quality SOCS on poor sites, covering 9.443ha and iv) SOCS in which other species are introduced, deciduous or coniferous, on 2.109ha. Generally, for SOCF as an object of management coppice systems are planned on 114.447ha; indirect conversion to high forests on 16.409ha; direct conversion with substitution on 3.749ha, while for 28.432ha objectives are not defined.

We investigated the re-sprouting ability of over-mature SOCS on mountain Bushava Planina, in May 2015, on type i) aged 85 to 90 years in which clear cut was done. We set 12 experimental plots (EPs) in two departments: 6 EPs in department 4 in which there was cutting in the winter 2012/2013, exactly 2 years before measurements (2 growing seasons) and 6 EPs in department 61 in which there was cutting in winter 2013/2014, exactly 1 year before measurement (1 growing season). On each EP dead stools were counted and the height was measured of the remaining living stools' sprouts and categorized by height.

Generative regeneration seedlings were counted on 4 subplots in every EP and categorized by height.

Of the average 726 stools per hectare, only 275 on average were re-sprouting. From the data obtained and further analyses it can be concluded that most of the 1 year old sprouts are with height of 31 to 60cm, while the two-year-old sprouts are 61 to 150cm. Generative regeneration was recorded in both groups of stands. However numerous sprouts of hazelnut trees which reach height up to 3 meters after two growing seasons, suffocate the oak seedlings both of vegetative and generative origin.

Keywords: sessile oak, over-mature, forest management, regeneration