Quantitative and Spatial Analysis of the Spatial Pattern of Wild Cherry (*Prunus avium L.*) in Hyrcanian Forests of Iran (Case Study: Forest Management Plan of Hajikola-Tirankoly)

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Abstract

Knowing spatial pattern of plant communities is necessary to recognition of forest ecology and management. In order to investigation on the spatial distribution pattern of wild cherry, forest management plan of Hajikola-Tirancoly in Mazandaran Province was selected. The locations of *Prunus avium* L.individuals with 100% inventory were recorded through GPS equipment in three areas of case study such as: Fagus type, protective area and plantation area. Qualitative characteristic of trees crown (symmetrical or unsymmetrical) and diameter at breast height was recorded. In order to achive spatial structure, landscape analysis and metrics in class level (with symmetrical and unsymmetrical crown) was applied using Fragstats and Arc Gis softwares. The results indicated that number of *Prunus avium* L. were 160 trees in our case study. Highest and lowest distance among trees was observed 67 and 121 meters, respectively. The results of metrics analysis showed that the distribution pattern of wild cherry in Fagus type was clumped pattern and protective area was uniform. The results of metrics Shannon- Wieners evenness (uniformity) and Simpson's diversity showed that the highest diversity and spatial arrangement was in Fagus type.

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