Introduction: Black pine is the most widely distributed tree species used extensively in the forestry in Turkey and covers an area of approximately 26.6 per cent of the total forest area. It is one of the most importance of ecologically, socially and economically. This study was aimed at determining suitable areas for the potential distribution of black pine in the Gölhisar district located in the western Mediterranean region in Turkey.

Material and Methods: Presence – absence data of black pine was collected from 400 sample plots, which are size of 20 x 20 m. Explanatory data which are elevation, slope, radiation index, topographic position index, parent materials and landforms were used to potential distribution model and map of black pine. Potential distribution model and map of the black pine was composed by Generalized Addictive Model (GAM). To control the validation of model were calculated by means of Receiver Operating Characteristics (ROC) curve.

Results: Obtained model of black pine by means of GAM was configured explanatory variables, which are elevation, parent material and landform. GAM showed that places where sandstone and serpentine were determined as primary parent materials, lower slopes, U shaped valleys and summits where average elevation was from approximately 1350 – 1850 m were found most suitable areas for potential distribution of black pine. According to ROC curve result, validation value and cross validation value were obtained to be 0.849 and 0.809, respectively. Finally, mapping of potential distribution model of black pine was visualized by using of Geographic Information Systems software.

Discussion: According to the findings from this study, it is not possible to state a general judgment on the distribution of the black pine. On the other hand, the results obtained from this study is especially important local scale in Gölhisar district. So, it can be suggested that the results can be used for forest operations such as restoration, protection of forest, afforestation in the district.