

Effects of degradation on meadow soil nutrient limiting factors and vegetation biomass of Wugong Mountain

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China Wugong mountain is located in the west of Jiangxi Province. In recent years, the scale of tourist activities, the number of tourists and the continuous extension of the scope, resulting in Wugong Mountain meadow community composition and productivity degradation to a great extent. This study focuses on Wugong Mountain's three different altitudes (1850m, 1750m, 1650m) in the area and distribution of degraded meadow in non-degraded meadow soil nutrient content and nutrient limiting factors and aboveground biomass were evaluated and analyzed, in order to explore the relationship between soil nutrients and vegetation biomass, and provide a theoretical basis for nutrient management and the selection of grass species in the meadow restoration process. Results show:(1) The non-degraded meadow soil (CK) is acidic, and rich in organic matter content, except Mg, Fe, S elements, there is a lack of other nutrient elements in different degree; the degradation of soil organic matter content in meadow is relatively low, except Ca, other elements were lower than those of non-degenerate; with the altitude increasing, soil in N, P, K, Mg and Zn content increased. (2) Meadow Degradation changed the adsorption of some nutrient elements in soil, the degradation in the three altitudinal range of meadow soil on K, P, B adsorption capacity was greater than CK soil, (3) Wugong Mountain meadow soil is a serious lack of P elements and Ca elements. The main nutrient limiting factors and the order of the deficit is: Ca>K>P (1850m, no degradation), B>P>Ca>N (1850m, degradation); Ca>P>N>K (1750m, not degraded), Ca>P>B>Zn>N (1750m, not degraded); Ca > P > K>Mo (1650m, not degraded), Ca>P>Zn (1650m, degradation). (4) The vegetation on the ground and underground biomass and soil pH was negatively related to density and the content of Ca, and a significant positive correlation with Zn content and N content.