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Study on distribution characteristics of loess gully at medium watershed scale based on UAV images

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Abstract: Gully erosion is one of the soil erosion types with the largest sediment yield on the Loess Plateau, and also an important part of soil erosion control on the Loess Plateau. Based on the UAV aerial photography as in 2020, with systematic sampling method in Chabagou watershed and select 32 small watershed as the basic research unit, artificial visual interpretation method is used to draw small watershed, gully ditch, gully and ancient valleys line, gully region of northern Shaanxi loess cutting groove distribution characteristics and influencing factors of medium watershed scale of research and analysis. The results showed that : (1) The intensity of gully erosion in chabagou Basin is middle reaches & GT; Downstream & gt; In the upper reaches of the basin, the length, number and area of ditches per unit area are 9.03 km, 339.04 and 7.29hm^2, respectively. More than 50% of the ditches are between 10m and 30m in length, and 60% of the ditches are less than 150m^2; (2) The ancient gully length density, gully length density, gully strip density and gully area density were the highest in the middle reaches of the basin. (3) The positive and negative terrain area ratio and slope directly affect the gully density, showing a moderate correlation; NDVI and the proportion of cultivated land had an indirect effect on the gully density, and the correlation was strong. The length, density and number of ditches in shady slope were significantly higher than those in sunny slope. This paper can explain the development characteristics of gully at medium watershed scale in loess gully region, clarify its distribution law, and provide theoretical basis for gully erosion control.