

Study on Spatial Variation of Soil Erosion in Northeastern China

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ABSTRACT

Severe soil loss of Northeastern China gives rise to widespread concern about it. But the research in soil erosion is only limited to certain spots now. To give further support to the plan of soil conservation, overall investigation of the temporal variation of soil erosion is urgently needed. To calculate soil loss amount, this paper established soil loss equation of Northeastern China by using soil erosion measurements from 160 plot-years, precipitation records from 234 meteorology stations, data of topography from remote sensing imagery, land use and soil information data. Then the application of the soil loss equation was validated by using ¹³⁷Cs measurements, and the temporal variation of soil erosion was analyzed.

The results showed that 21.2% of the area was with low erosion, 22.9% of the area with medium erosion and 6.8% with high erosion. Severe soil erosion occurred in cropland with steep slope. The cropland is the main source of soil erosion, which consisted of 75.8% of the total amount. And the intensity of soil erosion increased from the northwest to southeast, while the landform made the trend became more complex. Severe soil erosion happened in the hilly regions of the Songhua river basin and the western part of the Liao river basin, and the region with rich precipitation in the eastern part of the Liao river basin. This analysis will make important suggestion for the plan of soil conservation in this region.

Keywords: soil erosion; soil loss equation; spatial variation; Northeastern China

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