

研究报告

## 黄土高原吕二沟流域侵蚀产沙对土地利用变化的响应

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收稿日期 2005-4-8 修回日期 2005-5-24 网络版发布日期 接受日期

### 摘要

研究了甘肃天水黄土高原吕二沟流域土地利用变化对流域产沙的影响.结果表明,与1982年相比,1989年该流域林草面积增加约5%,梯田增加2.09%,裸地略有增加,坡耕地减少约1.5%,灌木林略有减少.1998~2000年,在植被覆被增加、陡坡坡耕地减少情况下,随降水增多,其减沙效应明显,如803 mm和786 mm降雨条件下,后期较前期(1982~1989年)分别减少85 326 t和52 937 t,降水较少,减沙效应较不明显;从年内含沙量变化来看,后期土地利用的减沙效应主要集中在5~10月,与降水的季节分配一致,各月降水越多,月日均含沙量减少越多,50 mm的月降水月日均含沙量减少6 kg·m<sup>-3</sup>,100 mm月降水月日均含沙量减少12 kg·m<sup>-3</sup>.两期土地利用在重现期小于5年时,后期土地利用洪水含沙量较前期稍大,主要由于两期的降水频率分布曲线不一致;若两期降水频率分布曲线一致,则同一频率降水产洪的洪水含沙量后期将小于前期.

关键词 [土地利用变化,产沙变化,黄土高原](#)

分类号

## Response of sediment production to land-use change in Luergou watershed of Loess Plateau

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### Abstract

The study on the effects of different land use patterns on the sediment production in Luergou watershed of Loess Plateau indicated that in comparing with 1982, the areas of forest and grass and of terrace in 1989 increased by 5% and 2.09%, respectively, while that of slope plowland decreased by 1.5%, with the area of naked land and shrubbery respectively increased and decreased a little. During 1998~2000, with the increase of vegetation cover and the decrease of steep slope plowland, the sediment production reduced significantly under high precipitation, 85 326 and 52 937 t under the precipitation of 803 and 786 mm, respectively, and not distinguishable in dry years. The reduction effect had a strong seasonality, which consisted with rainfall distribution. For example, in a month with 50 mm precipitation, the mean daily sediment concentration was reduced by 6 kg·m<sup>-3</sup>, while in a month with 100 mm precipitation, the reduction was 12 kg·m<sup>-3</sup>. Rainfall intensity also played an important role in soil erosion and sediment production, regardless of land use conditions.

Key words [Land use change](#) [Sediment production](#) [Loss Plateau](#)

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