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# SOIL AND WATER CONSERVATION IN CHINA

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## Abstracts

**Reflection and Suggestions on Scientific Issues of Ecological Protection and Restoration in the Yellow River Basin**

CUI Jianguo[1], GAO Guanglei[2]
(1. Chinese Society of Soil and Water Conservation, Beijing 100083, China;
2. Beijing Forestry University, College of Soil and Water Conversation, Beijing 100083, China) (5)

The paper analyzed the scientific issues of ecological protection and restoration in the Yellow River Basin, including water source conservation in the upper reaches, soil and water conservation in the middle reaches, and wetland protection in the lower reaches, and proposed corresponding implementation measures. The upper reaches of the Yellow River should focus on grassland protection and sustainable management, hydrological regulation of forest and improvement of water source conservation function, evaluation, maintenance and improvement of stability of sand fixing vegetation, water source conservation function construction and coordination between supply and demand of water resources. The middle reaches of the Yellow River should focus on the carrying capacity of water resources and the vegetation restoration potential for forest and grass, the appropriate scale and optimized layout of soil and water conservation measures construction, and the coordinated management of water and sediment in comprehensive watershed management. The lower reaches of the Yellow River should focus on the ecological base flow level, water consumption of sediment flushing, erosion and sedimentation evolution patterns, and biodiversity protection in the wetland.

**Key Word**: the Yellow River Basin; ecological protection and restoration; water conservation function; the carrying capacity of water resources; wetland protection

**Current Situation Analysis and Discussion of Preparation of Soil and Water Conservation Plans**

SUN Zhongfeng
(*Hippophae Rhamnoides* development and management center of the Ministry of Water Resources/Plant Development and Management Center of Soil and Water Conservation of the Ministry of Water Resources, Beijing 100038, China) (37)

In order to implement the *Implementation Plan of the Opinions on Strengthening Soil and Water Conservation Work in the New Era issued by the Ministry of Water Resources*, based on the quality sampling inspection of soil and water conservation plans in 2022 and the requirements of the *Management Measures for Soil and Water Conservation Plans of Production and Construction Projects* (hereinafter referred to as the *Management Measures*) issued in January 2023, the Ministry of Water Resources formulated the *Review Points for Soil and Water Conservation Plans of Production and Construction Projects* (hereinafter referred to as the *Review Points*) targeting the characteristics of soil erosion and water loss in different regions and industries in July 2023. In order to understand and implement the newly issued *Review Points* and *Management Methods*, the paper analyzed the problems existing in the current soil and water conservation plan, such as high change rate, insufficient preliminary work, lack of soil and water conservation content, and insufficient response to regulations and standards, and focused on analysis on the content of plan preparation in terms of the completeness of the project, the importance of preliminary work, the level of understanding of the main works, the scientificity of soil and water conservation measures, and the consistency of other related content. And the paper explained systematically the requirements for the clauses of *Review Points*, and clarified the requirements for review of soil and water conservation plans content to provide solutions for preparation and review of soil and water conservation plans.

**Key words**: soil and water conservation plans; status of preparation; change rate; preliminary work; project composition; soil and water conservation measures

**Layout of Protection System for Top of Discard Slag in the Spoil Ground of Railways**

ZHANG Weicheng
(China Railway Fifth Survey and Design Institute Group Co. Ltd., Beijing 102600, China) (44)

Taking the Gansu section of the newly built Zhongwei to Lanzhou Railway as an example, the paper analyzed the layout of soil and water conservation measures and their prevention and control effects in the spoil ground. The outcomes show that a) setting intercepting ditches around spoil ground and drainage ditches in the top of discard slag can effectively intercept the runoff washout by upstream rainfall, drain off the rain from the top of the slag yard, and avoid concentrated infiltration of rainwater and the formation of sinkholes; b) setting water retaining ridge in the top of the downstream slope can reduce slope erosion by more than 95%, and the effect of soil and water conservation is significant; c) after land leveling and covering soil in the top of the slag, using the grid shaped land preparation method can effectively reduce soil erosion and water loss in the early stages of construction and create the good environment for plant growth. It is an extremely effective land preparation model of soil and water conservation in arid and semi-arid areas; d) it is found that under the same planting conditions, the survival rate of *Atriplex canescens* is the highest, with an average of 91% and the demand of maintenance and management is low, followed by *Caragana korshinskii*, and the survival rate and preservation rate of grass seeds were generally low from experimental screening.

**Key Word**: the spoil ground; water retaining ridge; vegetation restoration; the grid shaped land preparation; the Gansu section of Zhongwei to Lanzhou Railway

**High-Quality Development Ideas of Soil and Water Conservation in Lueyang County in the New Era**

HAN Yongfu
(Lueyang County Soil and Water Conservation Workstation, Lueyang, Shaanxi 724300, China) (62)

Lueyang County is located in the key prevention and control area of soil and water conservation in the upper reaches of the Yangtze River and the key prevention and control area of soil and water conservation in the upper reaches of the Danjiangkou Reservoir Area. The management of soil erosion and water loss is of great significance for ensuring the sustainable northward transmission of clear water. Since 1989, Lueyang County has continuously carried out key prevention and control projects of soil and water conservation in the upper reaches of the Yangtze River, comprehensive management projects of soil and water conservation in the Danjiangkou Reservoir Area and upper reaches, national key projects of soil and water conservation, and provincial ecological and clean small-watershed management projects, and achieved significant effects. Based on summarizing soil and water conservation work experience in Lueyang County, the paper analyzed development ideas of soil and water conservation work, including strengthening leadership and improving mechanisms, enhancing innovation and breakthrough development, actively seeking funding of soil and water conservation projects, and strengthening publicity and training of soil and water conservation.

**Key words**: soil and water conservation; high-quality development; Lueyang County