Research on Ordos Model Based on Sustainable Development Perspective

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Abstract. In order to achieve the sustainable development of the region, aiming at the ecological degradation characteristics of the soil matrix and climate control in the Ordos Plateau and the ecological environment caused by the single model. This paper analyzes the ecological degradation characteristics of the regional ecosystem, the restoration of different degraded vegetation, the soil complex Erosion management technology, regional ecological security technology, regional eco-industrial development and reconstruction of human settlements in five areas to carry out sustainable development model for the implementation of the model to provide theoretical and technical research ideas, and strive to weaken the local ecological degradation rate, Promote the adjustment of local industrial structure, enhance the local green economy development rate, accelerate social development and ecological civilization construction.

1. Introduction
The Ordos Plateau is located in the fragile agro-pastoral zone in northern China. It is an ecological fragile zone, a serious zone of desertification, and an ecological barrier between the northwestern desert and eastern agriculture. The Ordos Plateau is surrounded by the Yellow River and is the main source of sediment in the Yellow River. It is also the source of sandstorms in northern China [1]. The natural geographical environment of the region is complex, the ecological environment is extremely fragile, the soil is resistant to erosion, and the local economic development is dominated by resource consumption. The model is single, the industrial chain is short, and the added value is low [2~4]. Explore a suitable area. Based on the analysis of the development status of Ordos, this paper takes the ecological characteristics of the Ordos Plateau sandstone area as the starting point, from the ecological degradation and erosion mechanism of the area, the research and development of the ecological comprehensive management technology system, the construction of the ecological derivative industry
model, and the construction of the ecological-economic advantage development area. Explore the sustainable development model for the region.

2. The current situation and problems of the development of Ordos

Ordos is located in the intersection of Inner Mongolia and Shanxi, Shaanxi and Ningxia provinces. The area is in a transitional zone from semi-arid, arid grassland to desertified grassland. The annual average precipitation is 150~300mm, and the annual average evaporation is as high as 2200~3000mm. Due to its special geological and geographical environment, coupled with the changes of nature and man-made influenced by factors, it has become one of the areas with the most concentrated desertification area and the most serious desertification damage in China [5,6]. However, the region is rich in natural resources. The proven reserves of coal account for one-sixth of the country's total. The proven reserves of natural gas account for about one-third of the country's total.

Affected by the natural environment and economic development model of the Ordos region, the surface of the area is fragmented, gully vertical and horizontal, loose surface and serious soil erosion. The area is divided into typical ecologically fragile areas by scholars [7]. In addition to the influence of the natural environment on the area, the goaf left by the exploitation of coal resources poses a greater threat to the stability of the surrounding rock formation and forms a radial fracture development zone with the goaf as the core. The coal goaf is a surface subsidence. The biggest cause of geological disasters such as landslides [8~11]. At the same time, in the open-pit coal mining process, the main impact on the ecological environment is the stripping. The stripping of the coal seam will interfere with the distribution of the surface water system and affect the growth of the surrounding surface plants, leading to a large area of arid desertification [12~15].

3. Ordos ecological comprehensive remediation model based on sustainable development model

In view of the characteristics of soil erosion and ecological fragility in Ordos, in order to construct a scientific sustainable development model suitable for the development of the region, the planning and construction of the district should adopt a scientific and technological innovation service system and recommend the harmonious development of ecology, economy and culture in the region.

3.1. Coupling mechanism and ecological carrying capacity of ecosystem degradation and regional compound erosion in ecologically fragile areas of Ordos

In order to better curb the continuous degradation of ecosystems in this area, the coupling mechanism of ecosystem degradation and complex erosion should be taken as a breakthrough to identify the transmission mechanism between ecosystem degradation factors and ecological accumulation effects, and to construct ecological degradation of complex disturbance components. Coupling system model with multiple erosions. Under the disturbance of social and economic factors, the regional ecological system carrying capacity and system self-sustaining ability of complex ecological degradation and multiple erosions, reveal the evolution law of ecosystem carrying capacity in the sandstone area, and establish the ecosystem bearing of natural degradation-multiple erosion and social economic superposition.

Force identification-evaluation-trend measurement system. Finally, a regional ecological disturbance prediction and early warning platform based on regional natural degradation, complex erosion and social economic superposition of virtual instrument system platform such as Lab View is constructed, and a database is established based on the main control factors and ecological cumulative effect parameters obtained by the research. Ecosystem health forecasting and warning system.

3.2. Study on Restoration and Reconstruction Techniques of Different Types of Degraded Vegetation in Desertification Area of Ordos

Investigate the land use change characteristics and driving mechanism in the desertification area of Ordos, and establish a local database of land use/cover change in desertification areas. According to different types of desertification, investigate the ecological characteristics and natural distribution of
plant species and the degradation process and succession of different vegetation types. Construct trend identification models for different types of degraded vegetation, develop trend identification and control techniques for artificial restoration of vegetation community succession; measure niche parameters and niche ranges of vegetation types in different types of loess sandstone areas, and map different degraded vegetation types Site conditional space map, combined with plant species succession rules in different regions, screening dominant plant species with ecological and economic benefits, researching and breeding niche-matched plant selection and planting technology with Qiao-irrigation-grass; establishing ecosystem service function evaluation The system simulates the characteristics of ecosystem function changes under different plant species and different planting methods, develops artificial restoration of vegetation ecosystem function enhancement technology, integrates vegetation community succession and recognition technology, plant selection and planting techniques, and ecological function upgrading technology. Construction of vegetation habitats Construction and Maintenance mode for manual intervention.

3.3. Study on Comprehensive Treatment Technology of Soil Compound Erosion in Mining Sites of Ordos Plateau

The physical and chemical characteristics and spectral characteristics of contaminated soil were determined systematically, and the remote sensing extraction model of soil was constructed to reveal the temporal and spatial distribution characteristics and mechanism of contaminated soil erosion. Develop a three-dimensional simulation technique for combined erosion of contaminated soils to clarify the response patterns of contaminated soil erosion processes to different natural and human factors. The soil grading screening scheme based on the local main soil material was determined to optimize the particle grading relationship and material composition to achieve soil remodeling, and to develop an economically feasible bio-promoting and improved compounding scheme. According to the topography and erosion characteristics, the key technologies of physico-biological-engineering combined with different land use target orientation are formed: physical retention in desertification areas to promote crust and improve soil erosion resistance; bioretention method is adopted to reduce wind erosion and Rainwater scouring force; engineering measures such as slope reconstruction, grid protection, spray mixing and planting, and terrace construction can be supplemented in undulating terrain such as steep slopes. Using space-based radar and rare earth tracer method, the soil erosion dynamic monitoring system was developed. The soil erosion and sediment distribution and its value were obtained through site comparison monitoring. The water and sand dynamic model was used to evaluate the ecological benefits of erosion control at the regional scale. Form a scientific and rational comprehensive model of soil erosion management.

4. Ordos sustainable development model safeguards

In view of the current situation of extensive economic development and extremely fragile ecological environment in Erdos, in order to ensure the further comprehensive verification and implementation of the Erdos ecological comprehensive remediation model based on the sustainable development model, the long-term goal of coordinated development of ecological, economic and social development in the region will be realized. The work needs to be ensured in the following aspects.

(1) Emphasis on the input of scientific and technological innovation

Actively introduce high-tech and talents to carry out research on the ecological fragility of Erdos region, jointly experts and scholars, implement the strategy of strengthening the city through science and technology, guide enterprises and research institutes to carry out technological innovation, research and develop ecological comprehensive management technologies, and continuously improve and perfect to curb the ecological environment of the region. The system continues to degrade.

(2) Formulate a scientific and rational regional development plan

In order to avoid the development model based on resource consumption, the district government should cooperate with relevant departments to formulate regional short-term, medium-term and long-term development plans in an all-round scientific and rational manner, and develop while managing,
based on the rigid constraints of regional development. Master the balance between ecological governance and economic development, and manage and develop the sub-districts to maximize the functions of each region.

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