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EVALUATION OF HIGHWAY CONSTRUCTION IMPACT ON ECOLOGICAL ENVIRONMENT OF QINGHAI-TIBET PLATEAU

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Abstract

This study is designed in order to determine the impact of Zhadao highway construction on ecological environment of Qinghai-Tibet Plateau, by comparing the quality of ecological environment before and after highway implementation. An index system of ecological environment impact evaluation of highway area is established, including terrain slope, vegetation coverage, desertification index and land use type. With the help of data mining and grey correlation degree theory, an ecological environment comprehensive evaluation model of multi index is proposed. This study analyzes the scale score of each evaluation index, and establishes a quantitative ecological environment evaluation model for highway areas in the Qinghai-Tibet Plateau. Taking Zhadao Highway in study area as an example, the state before and during the construction of the highway in 2014 and 2017 is selected for comparing and analyzing. The results show that the ecological environment in study area is obviously affected by highway construction. Significantly changed sections are concentrated in construction areas and urban residents densely populated area along the highway. Affected by factors such as highway earthwork and human activities, soil erosion has intensified, vegetation coverage has decreased, desertification has become more severe, and the overall quality of the ecological environment changed from superior to inferior.

Key words: ecological environment, impact evaluation, highway construction, grey relational grade, data mining, Qinghai-Tibet Plateau

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