

水庫濱水帶植生結構與環境變化之研究 - 以明湖水庫為例

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摘 要 本研究以植生演替平衡與環境間之關聯做為評估依據，利用水庫保護帶之環境梯度和植生變化，分析不同植生群落對環境變化的影響，以瞭解水庫濱水帶自然演替與人為管理兩者所造成植生群落結構之差異，並提出水庫保護帶劃設建議。於南投縣水里鄉與魚池鄉交界之明湖水庫選定三個調查林區（天然林區、人工林區及道路干擾林區）進行植生與環境調查，分析植生結構差異及植生演替與離水距離之相互關係，並將 18 項環境因子納入進行相關性分析。綜合評估水庫保護帶寬度，天然林區與人工林區需 30-50m，而道路干擾林區則需放寬至 60m 可達植生演替平衡。植生群落與環境特性之相關性顯示，隨離水距離增加，陰性樹種分佈隨之增多。

關鍵詞：水庫濱水帶、植生結構、環境梯度。

Study of the Vegetation and Variation of Environment at a Reservoir Riparian Zone – A Case of Min-Hu Reservoir

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ABSTRACT The major aim of the paper is to provide some suggestions about how to zone reservoir protective strips according to the research results. Taking the association between the balance of vegetative succession and environment as the basis of evaluation, the study analyzes the influences of different vegetation groups and environmental change by monitoring the environmental gradient and vegetative change in the reservoir's protective strip. The study shows that natural succession and artificial management result in different structures of vegetation groups.

In this study, three forestry areas (a natural forestry area, an artificial forestry area and a road disturbed forestry area) in Min-hu Reservoir, which is located on the border of Shuei-li Hsiang and Yu-chi Hsiang in Nan-tou County, are selected as the regions of investigation. According to the different amounts of soil erosion in the three regions, the study carries out the analyses of the structural differences of vegetation and the association between vegetative succession and the distance from water. Moreover, eighteen environmental factors are also included in the correlation analysis.

The structural features of vegetation can be determined according to four analysis items—vegetation continuums, species diversity indexes, structures of

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diameter classes and the correlation between the vegetation life style and the distance from water. After evaluating the width of the reservoir protective strip, the results shows that the width of natural forestry areas and artificial forestry areas should be 30-50m, but the width of road disturbed forestry areas should be extended to 60m to achieve the balance of vegetative succession. Furthermore, the correlation between vegetation groups and environment shows that the distribution of tolerant trees grows with the increase of the distance from water.

Conc watersheds for water resources design work.

Key Words: reservoir riparian, soil erosion, environmental gradient.