

Forestland Classification and Zoning with Liwoshe Working Circle by Using Ecological Method

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Abstract

Sustainable forest ecosystem management requires biological , physical, and human aspect information to communicate with the public, to make decision and carry out the management project. Meanwhile, aerial photographs, satellite images, maps and text as well as ground surveyed records are the information sources.

In this study, geomatics and multivariate analysis were applied to classify and to zone the forestland of Liwoshe Working Circle as the basis

of forest resource management. DTM was applied to automatically extract multi-scale watersheds as the basic homogeneous landscape units for forestland classification and to derive 12 physiographic factors. Factor analysis and cluster analysis were then involved to zone Liwoshe Working Circle into nature protection area, land protection area, and timber production area. Integrating the results with the soil-classification of TFB, a forestland classification database was established. A Multi-scale Forestland Classification Decision Support System with hierarchical structure was then developed by using Ecosystem Management Decision Support (EMDS) System, which was developed by the Forest Service of USDA. Finally, the forestland of the timber production area was classified by DSS with a logic trial on ArcMap.

[keywords] forestland classification, forest ecosystem management, Geomatics, geographic information system