THE EVOLUTION TREND OF THE GREEN LANDSCAPE SPATIAL PATTERN IN THE CENTRAL CHENGDU

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ABSTRACT: The Landsat/ETM+ satellite remotely sensing images taken in Mar. 5th, 2005 and Mar. 16th, 2009, are used to carry out the computation of the radiation calibration, reflection ration and NDVI, and to extract the information of green patches in the central Chengdu (Within the 3rd Ring Road), and to compute the indexes for the green landscape spatial pattern. The result shows that (1) The order of the number of the green patches in small, middle, large and extra-large size within the 2nd Ring Road (The city's core area) remains unchanged during the research period. The number of the middle-sized green patches is reduced from 83 to 67, while the number of other green patches changes very little. The total area of green lands is increased 22.2%, and the increment of the area of the extra-large green lands is as high as 105.5%; (2) The number of green patches in small and middle size within the 3rd Ring Road is increased, while that of those in large and extra-large size is reduced. The decrement of green lands' total area is 40.5%. The changes in the northeast and southwest of the research area are especially distinctive; (3) The diversity index of landscapes within the 2nd Ring Road has gone down, reflecting that the distribution of landscape types is in the balanced development. The index for the fractal dimension is reduced, meaning that the green patches are transformed to be in more regular shapes. The large and extra-large green lands between the 2nd and 3rd Ring Road are divided so that the number of those green patches is reduced. However, the evenness index and fractal dimension are increased, and the green land shapes tend to be irregular; (4) The results embody the achievement by the great work done for the systematic planning and construction of the urban green land system, reflecting the green land evolution in the process of urbanization.