

Analysis on the distribution of avian ecological groups from different water levels habitats during autumn migration provide way forward to preserve the diversity of birds in reserve

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Abstract: 【Objective】 The study was conducted to understand the relationship between ecological groups of birds, habitat water level in wetlands, and the spatial distribution of avian ecological groups in different habitat gradients. 【Method】 The study was carried out from August 2005 to October 2009, during autumn migration in the Zhalong Nature Reserve, China. The data were collected from sampling areas using line-transect sampling, square sampling, circle sampling, grand point sampling methods and analyzed by cluster analysis and Chi-Square test. 【Result】 The results showed that during autumn migration (1) a total 79 bird species from 32 families and 13 orders including six avian ecological groups were observed, namely Grallatores, Passeres, Natatores, Raptatores, Scansores and Terrestores (2)The Passeres, Grallatores and Natatores were the three dominant avian ecological groups during autumn migration. The reed marsh, with more than 30cm water depth(WL4) and the lake, with more than 30cm water depth(WL4), were the most preferred habitats. It was concluded that the dominant avian ecological groups preferred the reed marsh and lake with deep waters. (3) Different avian ecological groups had different preference for water levels($P<0.01$) and habitat types($P<0.01$). 【Conclusion】 The dominant wetland vegetation's and unique geographical regions were the key factors influencing the spatial distribution of the avian ecological groups. Based on this research, the red marsh and water bodies need more attention during autumn migration in order to preserve the diversity of birds in the reserve.

Keywords: habitat needs; ecological footprint method; environmental carrying capacity; breeding crane; Huihe Nature Reserve.