An Examination of the Characteristics of Turloughs, using Muitivariate Statistical Techniques

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Abstract

An inventory of turloughs (temporary lakes) on the Irish Carboniferous Limestone has been made, and their characteristics examined from field observations and cartographic evidence. The characteristics of sixty turloughs which function at the present day were summarised by a series of indices, and subjected to cluster analysis and detrended correspondence analysis. Separate groupings of the turloughs on the basis of morphology, deposits and vegetation were compared, and these three aspects of the turloughs were found to be inter-related. The turlough floor vegetation is related to depth of flooding, becoming increasingly dominated by marsh plants as the depth increases to approximately three metres, but some of the deepest turloughs, and those with variable depth due to undulating floors, have a short duration of flooding, and a floor vegetation dominated by dry land ruderals. The relationship between deposits and vegetation also appears to be related to duration of flooding, peat and marl being associated with a longer duration, and sand, silt, clay and diamicton being associated with a shorter duration.

The turloughs have been grouped into five clusters on the basis of all of the characteristics examined, and although there are indications that the variation is, at least partly, continuous rather than discrete, the clusters appear to provide a useful summary of the data.