

Agriculturally induced environmental changes in the Burren Karst, Western Ireland

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Abstract

The Burren plateau of County Clare is a classic example of a plateau karst characterised by patchy, thin soils, a lack of defined surface drainage, and in the instance of the Burren, a rich floristic, archaeological and landscape heritage.

Since accession to the European Union and, in particular, as a result of Common Agricultural Policy initiatives, attempts have been made to raise farm incomes and to modernise agriculture in areas such as the Burren.

Due to the encouragement of land reclamation and silage production has largely replaced hay farming for winter fodder. These changes pose a threat to groundwater quality by enhancing the leaching of artificial fertilizers or of organic pollutants.

The Burren is highly vulnerable to water pollution from silage effluent because of its thin or absent soils and its highly karstified aquifers.

A full survey of silage clamps was made in the summers of 1991 and 1992. For each site data were collected to derive the following: mass of silage, effluent produced, hazard rating of site to groundwater, likely discharge of effluent to groundwater and groundwater dilution index. About 60% of clamps were considered to be high risk and 23% medium risk. About 92% of all sites probably allow some effluent to infiltrate groundwater.